



ANNUAL REPORT

ON THE

Health of the County Borough of Cardiff,

FOR THE YEAR 1899

BY

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MEDICAL OFFICER OF HEALTH.

Printed by Order of the Sanitary Authority.

CARDIFF:

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1900

COUNTY BOROUGH OF CARDIFF.

Health and Port Sanitary Committee.

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Cardiff Urban Sanitary Authority.

MEDICAL OFFICER OF HEALTH'S DEPARTMENT.

Medical Officer of Health.

EDWARD WALFORD, M.D., D.P.H.

Chief Inspector of Nuisances.

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Inspector under Shop Hours Act and Inspector of Workshops.

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Disinfecter.

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Senior Clerk.

W. H. DAVIES.

Junior Clerk.

A. BULLEY.

*Cert. San. Inst.

CARDIFF URBAN SANITARY AUTHORITY.

TOWN HALL, CARDIFF,

June, 1900.

TO THE CHAIRMAN AND MEMBERS OF THE CARDIFF URBAN SANITARY
AUTHORITY.

GENTLEMEN,

I have the honour of submitting to you my Report for the year 1899, made in accordance with the Local Government Board's Order of March, 1891, which specifies the information to be contained in the Annual Reports of Medical Officers of Health.

A Memorandum upon this subject recently issued by the Board's Medical Officer directs that "the Report should be chiefly concerned with the conditions affecting health in the district "and with the means of improving those conditions. That it should consider these subjects with "reference to the past and future as well as to the particular year. That the account of the general "sanitary state of the district should, while marking the point that has been reached in the sanitary "condition and administration of the district, indicate directions for further consideration and "action; and that the sanitary history of the year under review should include a record alike of "the proceedings of the Medical Officer of Health himself and of the proceedings taken under his "direction."

The Municipal Borough of Cardiff originally comprised the parishes of St. John the Baptist and St. Mary the Virgin. Under the provisions of the Cardiff Improvement Act of 1875 the boundary of the Borough was extended so as to include the parish of Roath and that part of the parish of Llandaff known as Canton.

By an order of the Privy Council, dated 21st October, 1890, the Borough was divided into ten Wards. The following tables taken from the Census Report of 1891 give the distribution of the population in the Municipal Wards and civil parishes:—

TABLE I.—Distribution of the population in the Municipal Wards of the Borough
(Census 1891):—

MUNICIPAL BOROUGH OF CARDIFF.

Borough and Wards.	HOUSES.			POPULATION (CENSUS 1891).		
	Inhabited.	Uninhabited.	Building.	Persons.	Males.	Females.
Ward —Adamsdown ...	2,132	83	...	16,234	9,398	6,836
„ Canton ...	2,354	96	6	13,166	6,500	6,666
„ Cathays ...	2,408	25	12	14,523	7,404	7,119
„ Central ...	2,008	247	9	12,348	6,105	6,243
„ Grangetown ...	1,809	45	97	11,734	5,975	5,759
„ Park ...	2,587	110	109	14,289	6,754	7,535
„ Riverside ...	2,373	77	20	14,897	7,359	7,538
„ Roath ...	1,949	162	31	12,200	5,886	6,314
„ South ...	1,554	156	13	10,719	5,824	4,895
„ Splott ...	1,302	85	35	8,805	4,540	4,265
Total ...	20,476	1,086	332	128,915	65,745	63,170

According to the Census of April, 1891, the Population and the Number of Houses in each Parish were as follows:—

TABLE II.

Borough and Con- stituent Parishes.	HOUSES.			POPULATION, 1891.			Population, 1881.
	Inhabited.	Uninhabited.	Building.	Males.	Females.	Persons.	
Canton	5,484	180	85	16,425	16,380	32,805	14,797
Roath	6,552	367	175	19,884	19,773	39,657	23,096
St. John	4,386	218	29	13,060	14,098	27,158	16,614
St. Mary	4,054	321	43	16,376	12,919	29,295	28,254
County Borough of Cardiff	20,476	1,086	332	65,745	63,170	128,915	82,761

VITAL STATISTICS, 1899.

POPULATION.—The population of the Borough of Cardiff, as estimated by the Registrar General, on the basis of the census enumeration, was, for the middle of 1899, 185,826.

According to the census of 1891 the population of the Borough was at that time 128,915, being an increase of 46,154, or 55 per cent. since the census of 1881.

The estimates of the population made annually since 1891 are based on the assumption that the increase has gone on at exactly the same rate that it did during the intercensal period of 1881—1891. The birth-rates and death-rates, calculated on these estimates of population, are therefore only approximately correct and any error which may exist is necessarily increased in proportion to the length of time which has elapsed since the last census.

But with the view of ascertaining as far as possible the extent of the error, if any, in the official estimate, an inspection of the district is made in the month of June in each year in order to ascertain the number of inhabited houses in each Ward in the Borough. It is then possible to make an estimate of the population by multiplying this number by the average number of inmates in each house at the last census.

On referring to Table IV. it will be seen that the estimate of the population obtained in this way is below that of the Registrar General, and if taken as the correct figure, the rates of mortality as given in this Report and calculated on the larger population are slightly lower than the true rates.

The extent of the influence of this difference in the population on the death-rate is however so very slight that it need hardly be taken into consideration. If calculated on a population of 185,826 (the Registrar General's estimate) the death-rate is 15·3 per 1,000 for the year 1899 as compared with 15·8 per 1,000, the rate calculated on the smaller population of 180,212.

The density of population as measured by the number of persons per acre is given in the following table :—

TABLE III.
COUNTY BOROUGH OF CARDIFF.
DENSITY OF POPULATION.

Year.				Persons per Acre.
1890	...	...	...	15·9
1891	...	...	...	17·7
1892	...	...	...	18·5
1893	...	...	...	23·5
1894	...	...	...	24·6
1895	...	...	...	25·7
1896	...	...	...	26·8
1897	...	...	...	28·1
1898	...	...	...	29·3
1899	...	...	...	30·6

TABLE IV.
COUNTY BOROUGH OF CARDIFF, 1899.

DENSITY OF POPULATION.				HOUSES.			
WARD.	Area in Acres.	Population.	Persons per Acre.	Inhabited.	Vacant.	Building.	Total.
Central ...	473	13,605	28·7	2,163	396	7	2,566
South ...	519	11,774	22·6	1,872	117	1	1,990
Cathays ...	369	18,637	50·5	2,963	193	286	3,442
Park ...	533	25,789	48·3	4,100	143	8	4,251
Adamsdown ..	1,570	13,573	8·6	2,158	84	—	2,240
Riverside ...	313	18,857	60·2	2,998	154	15	3,167
Canton ...	449	21,618	48·1	3,437	472	150	4,059
Roath ...	766	14,875	19·4	2,365	138	113	2,616
Grangetown ..	1,905	20,203	10·6	3,212	251	21	3,486
Splott ...	1,454	17,115	11·7	2,721	96	22	2,839
Total U.S.D. { Cardiff*	8,351	176,050	30·6	27,989	2,044	623	30,656

* Excluding the Water Area in the Docks, 108 Acres, and 37 Acres on the Flat Holm Island, making a total of 8,496 Acres, including 2,600 Acres of Water and Foreshore.

INSTITUTIONS (CENSUS 1891).

	POPULATION
Barracks	278
Workhouse	713
H.M. Prison	201
Nazareth House	130
Flat Holme Barracks	9
"Hamadryad"	56
"Havannah"	80
Infirmary	143
	1,610
Sanatorium (estimated)	29
	<u>1,639</u>

Inhabited houses : 27,989 × 6·29 =	176,050
Institutions	= 1,639
Floating Population... ..	= 2,523
	<u>Population 180,212</u>
Registrar - General's Estimate of Population... ..	185,826

TABLE V.—Births, Deaths, and Natural Increase of Population for Fifty-five years
1845—1899.

Year.	Population.	Births.	Deaths.	Excess of Deaths over Births.	Excess of Births over Deaths.
1845	13,385	320	324	4	...
1846	14,212	381	321	...	60
1847	15,039	331	484	153	...
1848	15,866	428	579	151	...
1849	16,693	466	864	395	...
1850	17,520	504	485	...	19
1851	18,354	575	585	...	50
1852	19,724	696	620	...	76
1853	21,094	865	644	...	221
1854	22,464	950	925	...	25
1855	23,834	1,079	641	...	438
1856	25,204	1,227	772	...	455
1857	26,574	1,367	883	...	484
1858	27,944	1,356	753	...	603
1859	29,314	1,336	826	...	510
1860	30,684	1,346	662	...	584
1861	32,054	1,223	837	...	386
1862	32,804	1,267	695	...	373
1863	33,552	1,302	862	...	440
1864	34,300	1,369	932	...	467
1865	35,048	1,382	867	...	515
1866	35,796	1,331	882	...	449
1867	36,544	1,397	873	...	524
1868	37,292	1,387	843	...	544
1869	38,640	1,414	1,005	...	409
1870	38,788	1,406	903	...	503
1871	39,356	1,391	891	...	500
1872	40,284	1,358	916	...	442
1873	41,032	1,430	995	...	435
1874	41,780	1,550	885	...	665
*1875	69,850	2,716	1,547	...	1,169
1876	72,438	2,707	1,455	...	1,252
1877	75,026	2,772	1,475	...	1,297
1878	77,614	2,795	1,468	...	1,327
1879	80,202	2,969	1,428	...	1,541
1880	82,790	2,893	1,634	...	1,295
1881	85,378	3,145	1,556	...	1,598
1882	88,603	3,399	1,724	...	1,675
1883	91,204	3,526	1,807	...	1,719
1884	93,468	3,920	2,250	...	1,670
1885	97,034	4,164	2,487	...	1,683
1886	100,736	4,270	2,269	...	2,001
1887	104,580	4,277	2,280	...	1,997
1888	108,570	4,409	2,212	...	2,197
1889	112,712	4,361	2,190	...	2,172
1890	117,012	4,600	2,469	...	2,131
1891	130,283	4,739	2,873	...	1,866
1892	136,181	4,776	2,560	...	2,216
1893	142,435	5,110	2,794	...	2,316
1894	148,890	5,100	2,415	...	2,685
1895	155,637	5,321	2,840	...	2,481
1896	162,690	5,591	2,795	...	2,796
1897	170,063	5,279	2,534	...	2,745
1898	177,770	5,520	2,627	...	2,893
1899	185,826	5,309	2,858	...	2,451

* Canton and Roath taken into the Borough.

TABLE VI.
BOROUGH OF CARDIFF.

Population at different Ages, estimated to the middle of 1899.

Age.	Males.	Females.	Persons.
0—5	12,559	12,333	24,892
5—10	10,880	11,016	21,896
10—15	9,667	9,812	19,479
15—20	9,071	8,989	18,060
20—25	9,603	9,597	19,200
25—30	9,257	8,649	17,906
30—35	8,036	6,990	15,026
35—40	6,722	5,730	12,452
40—45	5,376	4,608	9,984
45—50	4,340	3,721	8,061
50—55	3,204	3,053	6,257
55—60	2,194	2,072	4,266
60—65	1,746	1,920	3,666
65—70	1,024	1,123	2,147
70—75	623	803	1,426
75—80	296	392	688
80—upwards.	171	249	420
All Ages	94,769	91,057	185,826

TABLE VII.

MARRIAGES.—The total number of Marriages registered during the year 1899 was 1,719; corresponding to a rate of 18·5 persons married per 1,000 persons living.

A return of the number of Marriages in the Borough of Cardiff, together with the rate of persons married per 1,000 of the population, is given below :—

Year.	No. of Marriages.	Rate per 1,000 persons living.
1886	1,244	24·6
1887	1,322	25·2
1888	1,259	23·1
1889	1,431	25·3
1890	1,440	24·6
1891	1,651	17·6
1892	1,526	22·4
1893	1,447	20·3
1894	1,480	19·8
1895	1,271	16·3
1896	1,721	21·1
1897	1,687	19·8
1898	1,525	17·2
1899	1,719	18·5

BIRTHS.—During the year 1899 the Births registered in the Borough were 5,309, of these 2,719 were males and 2,590 females.

The number corresponded to an annual Birth-rate of 28·5 per 1,000, compared with 31·0 in 1898, and with 30·2 per 1,000 the average rate in the large towns.

TABLE VIII. gives the number of legitimate and illegitimate births, male and female, and the number of deaths amongst children under one year of age in each Ward :—

TABLE VIII.

WARDS.			Legitimate.		Illegitimate.		Total.		TOTAL.	Deaths under One Year.
			M.	F.	M.	F.	M.	F.		
Central	Ward	...	147	149	4	4	151	153	304	49
South	"	...	129	132	4	1	133	133	266	62
Cathays	"	...	308	301	1	6	309	307	616	111
Park	"	...	347	307	5	4	352	311	663	114
Adamsdown	"	...	220	209	1	1	221	210	431	86
Riverside	"	...	103	103	1	1	104	104	208	80
Canton	"	...	445	413	7	8	452	421	873	107
Roath	"	...	223	221	...	2	223	223	446	89
Grange town	"	...	403	395	1	4	404	399	803	157
Splott	"	...	335	298	4	3	339	301	640	104
Union Workhouse	"	...	5	2	26	26	31	28	59	17
TOTAL			2,665	2,530	54	60	2,719	2,590	5,309	976

TABLE IX.—Annual Birth-rate in Cardiff compared with that in the large towns during the ten years ending 1899.

33 LARGE TOWNS.		Annual Birth-rate per 1,000 living.									
		1890	1891	1892	1893	1894	1895	1896	1897	1898	1899
London	...	29.1	31.8	30.9	31.0	30.1	30.5	30.2	30.0	29.5	29.4
West Ham	...	...	...	37.0	35.6	34.0	34.3	32.6	32.2	30.6	29.7
Croydon	...	...	...	26.5	26.2	25.0	25.3	25.1	25.0	25.4	25.1
Brighton	...	23.2	26.3	25.5	25.4	25.8	25.6	24.7	24.7	24.8	24.9
Portsmouth	...	33.6	30.1	28.0	28.2	27.6	27.9	27.6	26.9	26.7	26.2
Plymouth	...	31.2	29.8	29.1	29.9	28.6	28.7	28.8	28.5	29.7	29.8
Bristol	...	28.1	30.4	29.6	30.4	28.2	28.9	27.6	27.8	28.6	29.2
Swansea	...	...	...	35.2	35.1	32.3	33.4	30.5	29.4	28.9	27.7
Wolverhampton	...	32.3	34.2	33.7	34.5	34.1	35.4	34.4	35.1	35.8	35.3
Birmingham	...	30.1	34.2	33.3	32.7	31.7	32.4	32.6	33.3	34.0	34.3
Norwich	...	33.0	31.9	30.5	30.9	29.8	31.8	30.8	30.5	29.9	29.1
Leicester	...	30.5	33.9	32.2	32.6	31.5	30.8	30.8	30.6	29.6	29.4
Nottingham	...	24.9	29.9	29.4	30.2	28.6	29.7	28.9	28.9	28.9	28.9
Derby	...	26.9	30.6	31.1	32.2	29.3	29.1	28.0	27.1	27.4	28.1
Birkenhead	...	31.4	33.0	33.4	33.1	30.6	30.7	31.7	31.6	30.4	29.9
Liverpool	...	28.8	34.6	34.7	36.0	35.4	36.9	34.9	35.3	35.2	35.6
Bolton	...	31.4	34.1	32.7	33.1	31.5	32.9	31.3	32.5	30.9	29.9
Manchester	...	34.9	34.1	33.7	33.6	32.0	33.7	33.0	33.2	32.7	32.6
Salford	...	28.8	36.4	35.9	34.7	34.3	35.9	34.9	35.1	34.7	33.9
Oldham	...	27.0	31.1	29.1	28.6	27.2	27.5	27.2	26.1	25.3	24.8
Burnley	...	...	...	34.2	33.9	32.2	32.1	31.0	29.8	27.1	25.3
Blackburn	...	32.5	33.9	31.9	30.9	28.8	30.6	27.7	27.7	27.1	27.0
Preston	...	36.1	36.0	34.3	35.1	32.1	33.4	32.6	31.9	31.0	30.1
Huddersfield	...	22.6	24.4	23.0	23.8	20.2	21.7	20.5	23.4	22.5	23.0
Halifax	...	27.9	26.2	25.9	24.6	23.1	23.4	24.3	22.5	22.9	23.1
Bradford	...	25.6	28.7	27.2	27.7	26.7	26.1	25.5	24.6	24.0	23.4
Leeds	...	33.4	34.1	33.5	32.4	32.2	31.6	30.7	31.6	31.2	30.6
Sheffield	...	32.4	36.6	35.3	34.8	33.4	34.9	34.0	34.4	33.9	34.6
Hull	...	31.3	34.6	35.0	34.2	32.4	34.2	31.9	33.3	33.4	34.3
Sunderland	...	35.5	37.8	37.1	35.6	35.1	35.1	34.2	34.6	35.4	35.7
Gateshead	...	...	...	35.3	36.5	34.2	34.6	35.8	35.8	35.5	36.6
Newcastle-on-Tyne	...	39.8	35.8	34.3	33.7	31.0	31.2	31.1	31.3	31.7	31.4
Cardiff	...	39.3	36.5	35.3	36.0	34.4	34.1	34.3	31.1	31.1	28.6
Large Towns		30.0	32.6	31.9	31.9	30.7	31.3	30.7	30.7	30.3	30.2

DEATHS.—During the year 2,858 deaths were registered in the Borough, of these 1,476 were males and 1,382 were females. The deaths were equal to an annual death-rate of 15·3 per 1,000 persons living, as compared with 14·7 in the preceding year, and with 17·9, the average rate in the decennial period 1889-98. The “natural increase” of the population or the excess of births over deaths amounted to 2,451. I have again the satisfaction of recording a low death-rate, although not so low as the exceptionally low rates of 1897 and 1898. The death-rate for 1899 was with these exceptions, the lowest since the returns were first published, in 1845, and considerably below the average death-rate for the 33 large towns in England and Wales for the same period. In the Annual Summary of the Registrar-General for the year 1899, the rates of mortality in these large towns are given, from which it will be seen that the death-rate for Cardiff was, with the exception of that for Croydon, the lowest amongst these towns, the death-rates ranging from 15·0 in Croydon to 26·4 in Liverpool.

The number of deaths registered in Cardiff during the first quarter of the year at all ages and from all causes was 660, corresponding to an annual death-rate of 14·2 per 1,000 persons living, as compared with 18·1, the average rate in the first quarters of the five preceding years, and with 20·6 the rate in the 33 large towns. The death-rates in the large towns ranged from 14·2 in Cardiff, 15·4 in Croydon, 16·0 in Leicester, and 16·5 in West Ham to 26·4 in Liverpool.

The deaths from the chief zymotic diseases during the first quarter were in Cardiff 59 in number corresponding to an annual death-rate of 1·27 per 1,000, as compared with 1·79, the average rate in the first quarters of the five preceding years, and with 1·75, the average rate in the 33 large towns. Whooping Cough and Diphtheria were the most prevalent of the acute specific diseases during the first quarter of the year. Whooping Cough caused the highest fatality, the deaths being equal to an annual death-rate of 0·80 per 1,000, as compared with 0·18, the rate in the first quarter of 1898, and with 0·60, the average rate in the five preceding first quarters. Diphtheria caused 19 deaths, corresponding to a death-rate of 0·40 per 1,000 compared with 1·17, the rate in the first quarter of 1898, and with 0·51, the average rate during the five preceding first quarters.

During the second quarter of the year the total number of deaths registered in the Borough was 592, corresponding to an annual death-rate of 12·8 per 1,000 as compared with 15·8 the average rate in the second quarter of the five preceding years, and with 17·5 the rate in the 33 large towns. The death-rates in the large towns ranged from 12·8 in Cardiff, 12·9 in West Ham, 13·3 in Croydon, and 15·4 in Leicester, to 20·6 in Salford, 22·0 in Wolverhampton, 22·7 in Liverpool, and 23·6 in Manchester.

The deaths from the chief zymotic diseases during the second quarter were 58, corresponding to an annual death-rate of 1·2 per 1,000, as compared with 2·1 the average rate in the second quarter of the five preceding years, and with 1·74 the average rate in the 33 large towns.

Whooping cough was again the most fatal of the zymotics, causing 43 deaths, equal to an annual death-rate of 0·92 per 1,000, as compared with 0·13 the rate in the second quarter of 1898 and with 0·80 the average rate in the five preceding second quarters. Of the 43 deaths from this disease, 23 were amongst children under one year of age. The deaths from diphtheria during this quarter were six, being equal to a death-rate of 0·12 per 1,000, as compared with 0·48 the average rate in the five preceding second quarters.

The number of deaths in the third quarter of the year was 857, corresponding to an annual death-rate of 18·5 per 1,000, and with 16·1 the average rate in the third quarters of the five preceding years. The average death-rate in the 33 large towns for the third quarter was 21·9 per 1,000, ranging from 15·6 in Croydon, 16·4 in Huddersfield, 17·1 in Halifax, 17·5 in Bristol, 18·5 in Cardiff, to 20·6 in London, 21·8 in Brighton, 22·4 in Portsmouth, 24·2 in Birmingham, 26·3 in Burnley, 27·6 in Manchester, and 29·9 in Liverpool.

The deaths from the chief zymotic diseases amounted to 209, and corresponded to an annual rate of 4.52 per 1,000, as compared with 3.18 the rate in the third quarters of the five preceding years, and with 5.61 the average rate in the 33 large towns. Of the 209 deaths from zymotic diseases, 150 were due to diarrhoea, which in this quarter is always peculiarly fatal amongst children. Of the deaths from diarrhoea 123 occurred amongst children under one year of age; of these 26.0 per cent. were under three months old, 33.3 per cent. between three and six months, and 40.6 between six and 12 months of age.

In the fourth quarter of the year, 748 deaths were registered, corresponding to an annual death-rate of 16.1 per 1,000, as compared with 15.7, the average rate in the fourth quarters of the five preceding years, and with 20.8 the rate in the large towns. The death-rate in the large towns ranged from 14.7 in Huddersfield, 15.5 in Derby, 15.8 in Croydon, and 16.1 in Cardiff, to 22.6 in Portsmouth and Wolverhampton, 23.0 in Salford, 24.7 in Preston, and 26.6 in Liverpool.

The deaths from the principal zymotic diseases were 58 in number, equal to an annual rate of 1.24 per 1,000, as compared with 1.62, the rate in the fourth quarter of the five preceding years, and with 2.18, the average rate in the 33 large towns. Of the 58 deaths 18 were due to Diphtheria, 12 to Diarrhoea and 11 to Whooping Cough.

The following Table gives a summary of the vital statistics in Cardiff during the years 1890-1899 :—

TABLE X.

Years.	Births.	Birth-rate per 1,000 Inhabitants.	Deaths from all causes.	Death-rate per 1,000 Inhabitants.	Death-rate from the seven chief Infectious Diseases per 1,000 Inhabitants	Deaths under one year per 1,000 Births registered.
1890	4,600	39.3	2,469	21.1	2.4	165
1891	4,739	36.5	2,873	22.0	2.1	153
1892	4,776	35.0	2,560	18.7	2.7	157
1893	5,110	36.0	2,790	19.6	2.8	171
1894	5,100	34.2	2,415	16.2	1.7	137
1895	5,321	34.1	2,840	18.2	2.0	178
1896	5,591	34.3	2,795	16.8	2.2	165
1897	5,279	31.1	2,534	14.9	2.1	151
1898	5,520	31.0	2,627	14.7	2.2	157
1899	5,309	28.5	2,857	15.3	2.0	184

The table of mortality in the Appendix gives the causes of death of both sexes at certain age groups. From this it will be seen that out of a total of 2,858 deaths 1,314, or 46 per cent., were amongst children under one year of age. The most fatal of the zymotic diseases was Diarrhoea which caused at all ages 169 deaths and of these 140 were amongst children under one year of age. Next in order of fatality was Whooping Cough, which prevailed extensively during the first half of the year, causing at all ages and in both sexes 120 deaths, of which number 114 were amongst children under 5 years of age. The fatality from Diphtheria amounted to a total of 61 deaths, as compared with 129 in the year 1898.

The following tables show the death-rate per 1,000 at age periods from all causes, and from certain diseases, per 10,000 persons living at those periods.

TABLE XI.—Showing age. distribution of population, and the number of deaths, and the death-rates per 1,000 at age periods :—

Age Periods.	Estimated population, 1899.	Number of Deaths.	Annual Death-rate per 1,000.
0—5	24,892	1,314	52.78
5—15	41,375	129	3.11
15—25	37,260	148	3.97
25—65	77,618	897	11.55
65 upwards	4,681	370	79.04

TABLE XII.—Showing death-rate per 1,000 at age periods from certain diseases :—

	0—5	5—15	15—25	25—65	65 upwards.	All Ages.
Measles	0.4	—	—	—	—	0.06
Scarlet Fever	0.04	0.04	—	—	—	0.01
Diphtheria	1.7	0.3	0.02	0.02	—	0.32
Diarrhœa	6.4	—	—	0.05	0.8	0.90
Whooping Cough	4.5	0.09	0.02	0.01	—	0.64
Pneumonia	5.7	0.3	0.2	0.9	2.9	1.35
Bronchitis	4.4	0.07	0.05	0.7	14.0	1.27
Tuberculosis (all forms)	0.2	0.07	0.1	0.1	—	0.13

On referring to Table XXVIII., giving the mortality in the different divisions in the town, it will be seen that the general death-rates in the three Registration Sub-Districts do not vary much, and that they are very low in all, ranging from 13.0 per 1,000 in East Cardiff and 14.0 in West Cardiff to 15.9 in Central Cardiff. The death-rates from the chief zymotic diseases was 1.8 per 1,000 in the Central Sub-District and 2.0 per 1,000 in the East and in the West Sub-Districts.

The infant mortality as measured by the proportion of deaths under one year to 1,000 births registered, was highest in the Central Sub-District, where it reached 190 as compared with 175 in the East and with 182 in the West Sub-District.

The general death-rate in the different municipal wards ranged from 11.0 per 1,000 in the Park Ward and 11.6 in the Riverside Ward to 20.7 in the Adamsdown Ward.

The death-rate from the chief zymotic diseases ranged from 1.1 per 1,000 in the Riverside and in the Central Ward to 2.8 in the Grangetown and in the Roath Wards.

Diarrhœa was the most fatal amongst the zymotic diseases throughout the town, and was most fatal in the West Sub-District, the death-rate ranging from 1.5 per 1,000 in the Canton Ward to 0.4 in the South Ward.

Whooping cough was most fatal in the Roath Ward, the death-rate reaching 1.7 per 1,000, the lowest rate being 0.1 in the Riverside Ward. The diphtheria death-rate showed a considerable reduction as compared with that of 1898. The highest death-rate was 0.4 per 1,000 in the South Ward and in the Splott Ward, the lowest rate was .09 in the Grangetown Ward.

The long-continued low death-rate from typhoid fever was maintained during the year, and is in itself sufficient evidence of a good sanitary condition of the district.

The influence of season and weather upon mortality and sickness is particularly felt in the case of diseases of the respiratory organs and of diarrhœal diseases occurring amongst elderly and very young people.

A cold and dry winter is usually accompanied by a high general death-rate and a high rate from diseases of the respiratory organs, and a hot summer by a high rate of mortality from diarrhoeal diseases.

During the past year the Meteorological Tables enclosed in this report show that

The weather in the first quarter of the year was during the month of January mild and wet, with a prevailing south-west wind. During the early part of the month of February the weather was cold, after which a warm period set in, to be followed by cold and dry weather, with north-east and north-westerly winds. The mean temperature of the air during the first quarter was 1.2° below the mean reading for the corresponding quarter of the six preceding years. The effect of the cold weather upon the mortality from Whooping Cough and its complications was felt during this quarter.

In the second quarter of the year, during April, the weather was wet and dull, in May it was cold, and in June for the most part fine and dry. The mean temperature of the air was 53.0° , and corresponded to the mean of the corresponding quarter of the six preceding years.

In the summer or third quarter the weather was, until the middle of September, fine and warm, with periods of unusually high temperature in August, during which month the mean temperature of the air was 8.0° above the mean for the corresponding month of the past six years. During this month the fatality from diarrhoeal diseases was unusually great.

The weather during the fourth quarter of the year was wet and dull. The temperature was generally below the average during October and the latter part of November and December. Towards the end of October and during the greater part of November warmer weather set in, with a prevailing south-west wind. During the latter part of December a cold period occurred with some very low readings.

TABLE XIII.—Gives the population of each year, the annual deaths from all causes, from the seven chief zymotic diseases, and the death-rates from 1845 to 1899, inclusive, in the Borough of Cardiff.

Year.	Population.	All Causes.			Seven Chief Zymotic Diseases.		
		No. of Deaths.	Death Rates per 1,000.	Mean of 10 years.	No. of Deaths.	Death Rates per 1,000.	Mean of 10 years.
1845	13,385	324	24.2	33.1	51	3.8	10.0
1846	14,212	321	22.6		50	3.5	
1847	15,039	484	32.2		133	8.8	
1848	15,856	579	36.5		186	11.7	
1849	16,693	864	51.7		483	28.9	
1850	17,520	485	27.7		116	6.6	
1851	18,354	525	28.6		81	4.4	
1852	19,724	620	31.4		175	8.8	
1853	21,094	644	30.5		129	6.1	
1854	22,464	925	41.1		353	15.7	
1855	23,834	641	26.9	26.5	665	2.7	7.4
1856	25,204	772	30.6		136	5.3	
1857	26,574	883	33.2		234	8.8	
1858	27,944	753	26.9		128	4.5	
1859	29,314	826	28.1		212	7.2	
1860	30,684	662	21.5		95	3.0	
1861	32,054	837	26.1		100	3.1	
1862	32,804	695	21.2		132	4.0	
1863	33,552	862	25.7		268	7.0	
1864	34,300	932	27.1		250	7.3	
1865	35,048	867	24.7	23.5	161	4.5	3.9
1866	35,796	882	24.6		192	5.3	
1867	36,544	873	23.8		116	3.1	
1868	37,292	843	22.6		109	2.9	
1869	38,040	1,005	26.4		156	4.1	
1870	38,788	903	23.2		133	3.4	
1871	39,536	891	22.5		158	3.9	
1872	40,284	916	22.7		234	5.8	
1873	41,032	995	24.2		103	2.5	
1874	41,780	885	21.2		154	3.6	
*1875	69,850	1,547	22.1	20.0	294	4.2	3.3
1876	72,438	1,455	20.8		339	4.6	
1877	75,026	1,475	19.6		255	3.5	
1878	77,614	1,468	18.9		197	2.5	
1879	80,202	1,428	17.6		137	1.7	
1880	82,790	1,634	19.7		306	3.7	
1881	85,378	1,556	18.2		164	1.9	
1882	88,603	1,724	19.4		293	3.3	
1883	91,204	1,807	19.8		253	2.7	
1884	93,468	2,250	24.3		476	5.0	
1885	97,034	2,481	25.5	20.4	521	5.3	2.9
1886	100,736	2,269	22.5		532	3.2	
1887	104,580	2,280	21.8		278	2.6	
1888	108,570	2,212	20.3		324	2.9	
1889	112,712	2,190	19.4		248	2.1	
1890	117,012	2,469	21.1		282	2.4	
1891	130,283	2,873	22.0		272	2.1	
1892	136,181	2,560	18.7		371	2.7	
1893	142,435	2,794	19.6		408	2.8	
1894	148,890	2,415	16.2		257	1.7	
1895	155,637	2,840	18.2	15.3	324	2.0	
1896	162,690	2,795	16.8		362	2.2	
1897	170,063	2,534	14.9		371	2.1	
1898	177,770	2,627	14.8		396	2.2	
1899	185,826	2,858	15.3		384	2.0	

*Canton and Roath taken into the Borough.

TABLE XIV.—Annual Death-rate per 1,000 of the 33 large Towns in England and Wales for the 10 years 1890—1899 inclusive.

33 LARGE TOWNS.	Annual Death-rate per 1,000 living.									
	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899
London	20.3	21.4	20.6	21.3	17.8	19.8	18.6	18.2	18.7	19.8
West Ham	...	...	18.6	18.9	16.2	17.9	16.1	15.7	15.4	16.7
Croydon	...	...	15.8	16.3	13.2	14.5	14.2	13.1	13.9	15.0
Brighton	17.8	18.2	19.2	18.4	16.4	18.9	16.1	15.1	16.9	19.0
Portsmouth	19.6	19.0	18.5	18.2	15.2	17.8	16.6	16.2	16.3	19.7
Plymouth	22.4	22.5	18.8	21.2	18.3	20.1	19.6	19.0	19.5	21.7
Bristol	19.2	20.9	19.5	18.9	17.3	18.1	16.9	17.2	17.2	18.2
Swansea	...	...	20.4	19.6	17.0	18.3	16.8	15.8	18.6	18.1
Wolverhampton	21.8	24.2	21.5	23.3	20.7	24.4	20.0	22.5	21.3	21.8
Birmingham	20.7	22.2	20.4	22.2	18.6	20.3	20.8	21.6	20.0	20.8
Norwich	21.1	19.3	20.0	19.3	18.7	19.3	17.4	18.8	19.0	17.3
Leicester	17.9	21.7	18.2	20.0	14.7	17.2	16.7	17.7	16.9	17.7
Nottingham	16.5	19.9	18.7	18.5	17.2	19.0	17.5	18.8	17.7	20.0
Derby	18.5	19.1	19.3	18.2	15.0	16.7	15.7	16.0	16.8	16.9
Birkenhead	19.7	20.9	19.6	20.5	18.1	19.5	19.2	18.3	17.4	19.2
Liverpool	23.6	27.0	24.7	27.3	23.8	28.8	22.7	24.4	24.0	26.4
Bolton	25.8	21.9	22.8	24.1	18.8	24.0	20.7	22.0	19.4	19.9
Manchester	30.6	26.5	23.8	24.9	20.4	25.2	22.6	23.1	21.9	24.6
Salford	22.4	26.0	24.6	24.1	21.0	25.6	22.6	23.9	22.7	23.8
Oldham	21.2	25.7	22.0	21.0	18.6	22.0	20.3	19.2	17.6	20.5
Burnley	...	...	20.4	21.9	18.7	23.4	17.5	19.5	16.3	19.6
Blackburn	23.5	25.8	21.7	23.3	17.9	24.3	17.9	19.5	18.4	19.1
Preston	27.4	27.3	24.1	26.4	20.8	23.9	20.8	24.4	19.3	22.8
Huddersfield	19.0	23.0	18.1	17.2	15.8	16.9	16.5	16.4	15.9	16.2
Halifax	22.5	22.8	19.5	17.4	16.5	19.3	17.3	16.5	17.9	18.3
Bradford	20.4	22.2	18.0	21.0	17.0	19.9	16.5	17.5	17.6	18.4
Leeds	22.6	22.9	19.8	22.3	17.9	20.5	18.8	19.9	19.2	19.1
Sheffield	24.9	23.9	20.8	22.3	17.8	20.5	19.3	21.2	20.2	22.2
Hull	19.2	21.0	19.6	21.8	17.4	20.8	18.9	18.6	18.4	19.3
Sunderland	22.7	25.0	20.9	22.5	20.8	21.8	19.8	19.7	22.6	21.5
Gateshead	...	...	18.9	19.3	17.7	19.6	19.1	18.3	20.6	18.8
Newcastle-on-Tyne	25.9	23.8	19.7	21.0	18.3	20.5	18.5	19.1	21.4	20.6
Cardiff	21.1	22.0	18.8	19.6	16.2	18.2	16.8	14.9	14.7	15.4
Large Towns	21.3	22.5	20.7	21.6	18.1	20.7	18.9	19.1	19.0	20.2

CORRECTED DEATH-RATE.—Table XV. is taken from the Annual Summary of the Registrar-General for the year 1899, and gives the recorded and corrected death-rates in the large towns. The following is the explanation of the table as given in the Summary:—"In consequence of the great differences between one town and another with respect to age constitution of population these recorded rates need correction before they can properly be used for purposes of comparison. In the table factors are given by the use of which this correction can be made with approximate accuracy for each town. On applying these factors we obtain the 'corrected rates,' which are given in the fourth column in the table. In calculating the 'comparative mortality figure' for the fifth column, the death-rate for all England and Wales has been taken as 1,000, and the corrected rate of each town has been reduced to a figure comparable with that number taken as a standard. This column may be read as follows: After making approximate correction for differences of age and sex constitution, the same number of lives that in the year 1899 gave 1,000 deaths in England and Wales as a whole, gave 1,191 deaths in the 33 great towns—855 in Croydon, 903 in Norwich, 939 in Cardiff, &c.; also 1,460 in Salford, 1,522 in Manchester, and 1,580 in Liverpool."

From the above it will be seen that this correction makes very little difference in the relative position of the death-rate of Cardiff, which is still placed amongst the lowest on the list.

TABLE XV.—Recorded and Corrected Death-rates per 1,000 persons living in 33 Great Towns in 1899.

Towns, in the order of their Corrected Death-rates.				Standard Death-rate.*	Factor for Correction for Sex and Age Distribution.†	Recorded Death-rate, 1899.	Corrected Death-rate, 1899.‡	Comparative Mortality Figure, 1899.§
Cols.				1.	2.	3.	4.	5.
England and Wales ...				19.15	1.0000	18.33	18.33	1,000
England and Wales, less the 33 Towns ...				19.45	0.9845	17.29	17.02	929
33 Towns ...				17.71	1.0813	20.19	21.83	1,191
Croydon ...				18.37	1.0424	15.04	15.68	855
Norwich ...				19.99	0.9579	17.29	16.56	903
Cardiff ...				17.16	1.1159	15.42	17.21	939
West Ham... ..				17.75	1.0788	16.71	18.03	984
Derby				17.36	1.1031	16.93	18.68	1,019
Huddersfield				16.47	1.1627	16.19	18.82	1,027
Bristol				18.45	1.0379	18.25	18.94	1,033
Brighton				18.94	1.0110	18.95	19.16	1,045
Leicester				17.64	1.0855	17.71	19.22	1,049
Swansea				17.53	1.0924	18.15	19.83	1,082
Portsmouth				18.73	1.0224	19.70	20.14	1,099
Gateshead				17.83	1.0740	18.79	20.18	1,101
Hull				18.23	1.0504	19.30	20.27	1,106
Halifax				17.20	1.1133	18.25	20.32	1,109
Birkenhead				17.42	1.0993	19.16	21.06	1,149
London				17.97	1.0656	19.78	21.08	1,150
Plymouth				19.70	0.9720	21.72	21.11	1,152
Bradford				16.73	1.1446	18.44	21.11	1,152
Leeds				17.28	1.1082	19.14	21.21	1,157
Blackburn... ..				17.05	1.1231	19.13	21.48	1,172
Nottingham				17.81	1.0752	19.99	21.49	1,172
Newcastle				17.58	1.0892	20.56	22.39	1,221
Sunderland				18.25	1.0493	21.48	22.54	1,230
Bolton				16.90	1.1331	19.89	22.54	1,230
Burnley				16.67	1.1487	19.63	22.55	1,230
Wolverhampton				18.30	1.0464	21.81	22.82	1,245
Birmingham				17.33	1.1050	20.84	23.03	1,256
Oldham				16.72	1.1453	20.47	23.44	1,279
Sheffield				17.22	1.1120	22.16	24.64	1,344
Preston				17.42	1.0993	22.84	25.11	1,370
Salford				17.03	1.1244	23.80	26.76	1,460
Manchester				16.90	1.1331	24.61	27.89	1,522
Liverpool				17.44	1.0980	26.38	28.97	1,580

*The Standard Death-rate signifies the rate at all ages calculated on the hypothesis that the rates at each of twelve age-periods in each town were the same as in England and Wales during the ten years 1881-90, the rate at all ages in England and Wales during that period having been 19.15 per 1,000.

†The Factor for Correction is obtained by dividing the Standard Death-rate in England and Wales by the Standard Death-rate in each town, and is the figure by which the Recorded Death-rate should be multiplied in order to correct for variations of sex and age distribution.

‡The Corrected Death-rate is the Recorded Death-rate multiplied by the Factor for Correction.

§The Comparative Mortality Figure represents the Corrected Death-rate in each town compared with the Recorded Death-rate at all ages in England and Wales in 1899, taken as 1,000.

INFANT MORTALITY.—The rate of infant mortality, as measured by the proportion of deaths of infants under one year of age to 1,000 births registered, was 184, as compared with 157 in 1898, and with 162, the average in the ten years 1889-98. In the 33 large towns the rate of infant mortality in 1899 was 181, and was 11 per 1,000 above the average proportion in the ten preceding years. During the year 1899 the lowest proportions in the 33 towns were 152 in Huddersfield, 154 in Croydon, 158 in Bristol, and 159 in Halifax. The highest proportions were 209 in Salford, 210 in Nottingham, 255 in Preston, and 269 in Burnley. The somewhat high rate of infant mortality throughout the country was in a measure due to an increase in the diarrhoeal death-rate amongst infants during the summer quarter of the year. In Cardiff also a high rate of infant mortality occurred during the preceding winter, due to the extensive prevalence of whooping cough. At the same time the ignorance of mothers and of those having charge of infants contributed largely to increase the infantile mortality.

TABLE XVI.

CAUSES OF DEATH.							Number of Deaths under 1 Year of Age.
Premature Birth ...	...	...	...	...	...	...	66
Congenital Defects ...	...	...	...	...	...	...	22
Diphtheria ...	...	...	...	...	...	...	5
Scarlet Fever ...	...	...	...	...	...	...	—
Measles ...	...	...	...	...	...	...	—
Whooping Cough...	...	...	...	...	...	...	77
Diseases of Respiratory System	...	...	...	...	...	...	164
„ Nervous System ...	...	...	...	...	...	...	73
„ Digestive System	...	...	...	...	...	...	190
Diarrhoea... ..	...	...	...	...	...	...	140
Tubercular Meningitis	...	...	...	...	...	...	28
Other Tubercular Diseases	...	...	...	...	...	...	5
Violence ...	...	...	...	...	...	...	7
Other Diseases ...	...	...	...	...	...	...	199

ZYMOTIC DISEASES.—The 2,858 deaths from all causes included 384 from the seven chief zymotic diseases. Of these

12	were	attributed	to	Measles.
3	„	„	„	Scarlet Fever.
61	„	„	„	Diphtheria.
120	„	„	„	Whooping Cough.
19	„	„	„	Enteric Fever.
169	„	„	„	Diarrhoea.

The 384 deaths corresponded to an annual death-rate of 2·06 per 1,000 persons living as compared with 2·24, the death-rate in 1898. The death-rate from the chief zymotic diseases in the 33 large towns in England and Wales averaged 2·81 per 1,000, and ranged from 1·56 in Croydon, 1·65 in Derby, and 1·79 in Huddersfield, to 3·93 in Preston, 4·32 in Salford, 4·35 in Burnley, and 4·39 in Sheffield.

SMALL-POX.—No deaths were registered from this disease during the year, and no cases were notified within the Urban Sanitary District.

WHOOPIING COUGH.—One hundred and twenty deaths were registered from Whooping Cough during the year, as compared with 43 in 1898. The deaths from this disease corresponded to an annual death-rate of 0·64 per 1,000 as compared with 0·38, the average rate in the 33 large towns of England and Wales. The average annual death-rate from Whooping Cough in the ten years, 1889—98, was 0·45 per 1,000 in Cardiff, and 0·51 in the large towns for the same period.

Of the total number of deaths from this disease 77 were amongst children under one year of age. Thirty-seven deaths from Whooping Cough were registered during the first quarter of the year and 43 in the second quarter, the numbers falling to 29 in the third and to 11 in the fourth quarter.

SCARLET FEVER.—Three deaths were registered from Scarlet Fever, as compared with 8 in 1898 and 17 in 1897. The deaths were equivalent to an annual death-rate of 0·01 per 1,000 in Cardiff and to a rate of 0·13 in the large towns, the rates ranging in these towns from 0·01 in Cardiff, 0·02 in Croydon, 0·03 in Plymouth, 0·04 in Bristol to 0·26 in Liverpool, 0·27 in Halifax, 0·31 in Oldham, 0·45 in Bradford, and 0·67 in Burnley. The average annual death-rate from Scarlet Fever during the ten years 1889—98 was 0·18 in Cardiff and 0·23 in the 33 large towns for the same period.

The total number of cases of Scarlet Fever notified within the borough since the adoption of the Infectious Diseases Notification Act, 1889, and the proportion of deaths to such cases were as follows:—

Year.	Cases Notified.		Deaths.		Mortality per cent. of Cases Notified.	
1890	...	335	...	19	...	5·6
1891	...	685	...	35	...	5·0
1892	...	1,851	...	87	...	4·7
1893	...	816	...	39	...	4·7
1894	...	577	...	8	...	1·3
1895	...	484	...	8	...	1·6
1896	...	874	...	28	...	3·2
1897	...	758	...	17	...	2·2
1898	...	332	...	8	...	2·4
1899	...	184	...	3	...	1·6

With respect to the season of the year, the relation of notifications and deaths was as follows:—

1899.	No. of		No. of		Mortality
	Notifications.		Deaths.		per cent.
First Quarter	...	42	0	0·0	
Second Quarter	...	31	0	0·0	
Third Quarter	...	42	0	0·0	
Fourth Quarter	...	69	3	4·3	

One hundred and eighty-four cases of Scarlet Fever, or 66 per cent. of the cases notified were removed to the Borough Hospital for infectious diseases.

It is gratifying to notice the annual increase in the proportion of cases removed to the hospital since the date of the opening of this institution in the autumn of 1895, and to observe at the same time the decrease in the actual number of cases of Scarlet Fever reported, a decrease in all probability due in a great measure to the more complete isolation which was effected in those cases which were removed.

The following is the number of cases of Scarlet Fever notified since 1895, together with the proportion of such cases removed to hospital:—

Year.	No. of cases reported.		Proportion removed to Hospital.	
			per cent.	
1895	...	484	43	..
1896	...	874	48	..
1897	...	758	50·7	..
1898	...	332	56	..
1899	...	184	66	..

The local incidence of the disease in each quarter of the year, as shown by the notifications in each of the Registration Sub-districts was as follows :—

		1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.
West Cardiff ...	...	15	13	21	21
Central Cardiff ...	...	10	7	9	31
East Cardiff ...	...	16	11	12	15

MEASLES.—Twelve deaths were registered from Measles, as compared with fifty in the preceding year, and with 75 in 1897. The deaths corresponded to an annual death-rate of 0·06 per 1,000 of the population, as compared with 0·37, the average death-rate during the ten years 1889-98. In the 33 large towns of England and Wales the death-rate from Measles was 0·46 per 1,000, against an average rate of 0·60 in the ten preceding years. The lowest rates were 0·01 in Brighton, 0·02 in Wolverhampton, 0·04 in Norwich, and 0·06 in Cardiff. The highest rates were 0·68 in West Ham, 0·78 in Burnley, 0·97 in Salford, and 1·30 in Manchester. Measles is a disease which shows a tendency to recrudescence every two or three years, and during such epidemic periods spreads through a district with great rapidity, causing a high mortality amongst young children. At such times it has been found advantageous to close the Infant Departments of the Public Elementary Schools in which the average attendance has been much affected. Owing to the fact that this disease is not notified under the Infectious Disease Notification Act, it is difficult to ascertain the extent of the prevalence in any particular district, but great assistance is afforded by the co-operation of the School Attendance Officers and Managers and Teachers of schools, who send systematic returns of their absent scholars to the Medical Officer of Health. By this means the exclusion from school of children from infected houses can be secured, and the more serious interference with education, which would result from school closure, prevented. From the above statistics it will be seen that the prevalence of measles as indicated by the mortality has steadily declined since 1897. It was not therefore necessary during the past year to advise the closure of any of the Public Elementary Schools in the district.

TYPHOID FEVER.—Nineteen deaths from Typhoid Fever were registered during the past year, against 17 in the preceding year and 20 in 1897. The number of deaths was equivalent to an annual death-rate of 0·10 per 1,000 of the population, a rate which corresponded with that in 1898. The death-rate from "Fever," mainly Typhoid, in the 33 large towns was 0·22 per 1,000, for 1899 against an average of 0·20 for the ten years 1889-98. The rate in Cardiff was 0·04 below the average in the same decennial period. The lowest rates in the large towns were 0·07 in Croydon and in Plymouth, 0·08 in Swansea, 0·10 in Cardiff and in Newcastle-upon-Tyne. The highest were 0·43 in Birkenhead, 0·48 in Nottingham, 0·51 in Sheffield, and 0·52 in Wolverhampton.

The number of cases of Typhoid Fever notified within the Borough, and the mortality during each year, since the adoption of the Infectious Diseases Notification Act, is given below :—

Year.	Cases Notified.	No. of Deaths.	Percentage Mortality.
1890 ...	152	23	15·1
1891 ...	130	26	20·0
1892 ...	118	24	20·3
1893 ...	103	18	17·4
1894 ...	62	7	11·2
1895 ...	79	14	17·7
1896 ...	74	13	17·5
1897 ...	117	20	17·0
1898 ...	80	17	21·2
1899 ...	94	19	20·2

Age incidence of the disease.

Age Periods.	Cases Reported.	Deaths.
0—5	0	0
5—15	19	0
15—25	25	9
25—65	50	10
65 upwards	0	0

TABLE XVII.

The Seasonal Incidence of Typhoid Fever upon the various Wards in the Borough, and upon the Public Institutions, was as follows in 1899:—

WARD.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.	
	Cases notified.	Deaths.	Cases notified.	Deaths.	Cases notified.	Deaths.	Cases notified.	Deaths.
Central	1	..	5	1
South	2	..	..	..
Cathays	5	1	2	..
Park	..	1	..	2	8	1	5	..
Adamsdown	2	..	..	..
Riverside	1	4	3	3	..
Canton	..	2	..	2	5	1	8	1
Roath	..	1	..	..	3	1	..	..
Grangetown	..	4	..	2	12	2	6	..
Splott	..	1	..	..	2	..	3	..
Union Workhouse	1	..	..	..
Seamen's Hospital
Sanatorium	1	..	3	..	3
Infirmery	1	..	..	..	..
Totals	..	9	..	8	45	12	32	5

FEVER MORTALITY (including Typhus, Typhoid and Continued Fevers).—Death-rates per 1,000 of the Population.

	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.
England and Wales	0·18	0·18	0·18	0·18	0·15	0·22	0·16	0·17	0·17	0·61	0·18	0·20
33 Large Towns	0·20	0·20	0·19	0·20	0·15	0·24	0·19	0·20	0·19	0·18	0·20	0·22
Cardiff	0·33	0·25	0·19	0·19	0·19	0·12	0·04	0·10	0·08	0·11	0·09	0·10

Amongst the houses in which Typhoid Fever occurred 22 were found to have defective sanitary arrangements.

These defects were remedied without delay under the supervision of the Inspectors of Nuisances.

Of the 94 cases notified to the Medical Officer of Health during the year 19 were imported into the town from outside the district, and five were secondary cases occurring in the same house. Eight cases were subsequently found not to be typhoid.

The mortality from Typhoid Fever still continues low, and is satisfactory evidence of the value of the sanitary improvements which have been carried out since the passing of the Public Health Act, 1875. Amongst the most important of these in relation to the comparative immunity of the district from this disease may be mentioned the new Water Works, by means of which a pure and plentiful supply of water from the Taff Fawr water-shed of the Brecon Beacons is distributed to the public. The establishment of the bacteriological laboratory will now afford facilities to the Medical Officer of Health and to medical practitioners for the early diagnosis of this disease, and will enable the Sanitary Authority to deal with such cases with greater promptitude and efficiency. The effect of warm weather upon the development of Typhoid Fever is seen in the increase in the number of cases and mortality in the third quarter of the year.

It is to be noted that the rise in the Typhoid Fever mortality is coincident with a rise in Diarrhoeal mortality, the same influences operating apparently in the case of both diseases. In both cases the temperature of the air, or more probably that of the soil at this season of the year, acts as a powerful pre-disposing cause of the disease. Happily the local conditions necessary to produce any widespread prevalence were absent.

DIPHTHERIA.—Sixty-one deaths were registered from diphtheria in 1899, as compared with 129 in 1898.

The number of deaths was equivalent to an annual death-rate of 0·32 per 1,000. This mortality compares favourably with that of the six preceding years. In 1893 the death-rate reached 0·68, the highest in recent years. In 1894 it declined to 0·46, and in 1895 to 0·36 per 1,000; rising again in 1896 to 0·37, in 1897 to 0·53, and in 1898 to 0·72 per 1,000. In the 33 large towns the death-rate was 0·40 per 1,000 in 1899, ranging from 0·05 in Huddersfield, 0·06 in Sunderland, 0·08 in Derby and in Gateshead, and 0·09 in Bolton to 0·78 in Leeds, 1·06 in Leicester, 1·28 in Sheffield, and 1·36 in Swansea. The average death-rate from diphtheria in the ten years 1889-98 was in Cardiff 0·37, as compared with 0·32 in the large towns for the same period.

The following table shows the comparative mortality from diphtheria in 1899 in various parts of the country, and particularly in large centres of population in South Wales:—

TABLE XVIII.—COMPARATIVE DEATH-RATE FROM DIPHTHERIA, 1899.

	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Whole Year.
England and Wales	0·30	0·23	0·26	0·36	0·29
London	0·42	0·31	0·39	0·61	0·43
33 Great Towns	0·40	0·31	0·36	0·53	0·40
67 other Large Towns	0·30	0·27	0·26	0·30	0·28
Swansea	0·24	1·51	1·01	0·70	1·36
Merthyr	0·50	0·27	0·70	0·50	0·50
Aberdare	3·66	3·32	2·89	1·53	2·85
Rhondda	1·49	1·81	1·52	1·19	1·57
Cardiff	0·41	0·13	0·39	0·39	0·33

The number of cases of diphtheria reported to the Sanitary authority in 1899 amounted to 628. The case mortality, or proportion of deaths to cases reported, was 9·5.

The decline in diphtheria prevalence was no doubt partly due to the natural decline which was to be expected after an epidemic period, but it was also due to the more complete isolation of cases which took place during the year. From the report of the Medical Superintendent of the Infectious Diseases Hospital, it will be seen that 303 cases of diphtheria were admitted into the hospital, or 48 per cent. of the cases notified, as compared with 23 per cent. in 1898. I have on previous occasions alluded to the varying severity of the disease in different parts of the town as shown by the case mortality. During the year the proportion of deaths to cases notified ranged from 2·5 per cent. in the Roath Ward, 5·5 in the Central Ward, and 5·6 in the Adamsdown Ward, to 12·3 in the Splott Ward and 37·6 in the Grangetown Ward. The high rate in the Grangetown Ward was due entirely to the fact that 24 out of a total of 26 deaths registered in this Ward included those which took place in the Cardiff Sanatorium, and which were, of course, removed to that Institution from all parts of the town. The local incidence of the disease and also the number of cases reported at certain age periods during each quarter of the year is shown in the following tables.

TABLE XIX.

DIPHTHERIA, 1899.

WARD.						Cases reported per 1,000.	Death-rate per 1,000.
Central	...	...	...	...	...	3·96	0·22
South	...	...	...	...	...	5·60	0·42
Cathays	...	...	...	...	...	2·30	0·10
Park	...	...	...	...	...	3·17	0·19
Adamsdown	...	...	...	...	...	6·48	0·36
Riverside	...	...	...	...	...	1·69	0·10
Canton	...	...	...	...	...	2·40	0·13
Roath	...	...	...	...	...	5·17	0·13
Grangetown	...	...	...	...	...	3·41	1·28†
Splott	...	...	...	...	...	3·79	0·46

† Including deaths at Sanatorium.

TABLE XX.

DIPHTHERIA, 1899.

Age Periods of Reported Cases.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.
Under three years	25	10	15	14	64
Three and under thirteen	143	59	72	90	364
Thirteen and under twenty-five	41	22	36	28	127
Twenty-five and upwards	27	17	9	20	73
Total	236	108	132	152	628

TABLE XXI.

DIPHTHERIA, 1899.—AGE PERIODS OF REPORTED CASES IN VARIOUS WARDS.

WARD.	Total number of Cases of all Ages.	Under Three Years. Percentage.	Three and under Thirteen. Percentage.	Thirteen and under Twenty-five. Percentage.	Twenty-five and upwards. Percentage.
Central	54	7.4	64.8	18.5	9.2
South	66	16.6	68.1	10.6	4.5
Cathays	43	6.9	39.5	37.2	16.2
Park	82	8.5	56.0	23.1	12.1
Adamsdown	88	9.0	80.6	3.4	6.8
Riverside	32	3.1	34.3	37.5	25.0
Canton	52	15.3	44.2	21.1	19.2
Roath	77	5.1	67.5	22.0	5.1
Grangetown	69	11.5	46.3	26.0	15.9
Splott	65	15.3	55.3	18.4	10.7

TABLE XXII.—DIPHTHERIA, 1899.

Showing proportion of deaths to cases reported in various Wards :—

WARD.	Cases reported.	Deaths.	Mortality per cent.
Central...	54	3	5.5
South ...	66	5	7.5
Cathays ...	43	2	4.6
Park ...	82	5	6.0
Adamsdown ...	88	5	5.6
Riverside ...	32	2	6.2
Canton ...	52	3	5.7
Roath ...	77	2	2.5
Grangetown ...	69	26	37.6
Splott ...	65	8	12.3

DIARRHŒA.—The deaths from Diarrhœa numbered 169, as compared with 149 in 1898. The mortality was equal to a rate of 0.90 per 1,000 against an average of 0.83 for the 10 years 1889-98.

The average death-rate in the 33 large towns was 1.21 per 1,000, and was 0.29 above the average in the preceding ten years. The lowest rates last year were 0.47 in Halifax, 0.71 in Swansea, 0.74 in Birkenhead, and 0.75 in Newcastle-upon-Tyne. The highest rates were 1.83 in Manchester, 1.87 in Liverpool, 1.97 in Salford, and 2.30 in Preston.

The distribution of diarrhoeal mortality in Cardiff according to the season of the year and the various age periods was as follows :—

TABLE XXIII.

Deaths from Diarrhoea.	1st Quarter.	2nd Quarter.	3rd Quarter.	4th Quarter.	Year.
Under one year	1	6	123	10	140
One and under five	—	—	19	2	21
Five and under fifteen	—	—	—	—	—
Fifteen and under twenty-five	—	—	—	—	—
Twenty-five and under sixty-five	—	—	4	—	4
Sixty-five years and upwards	—	—	4	—	4
Total	1	6	150	12	169

The relation between the temperature of the air, rainfall, and the diarrhoea mortality during the third quarters of the ten years 1890—1899 is shewn in the following table :—

TABLE XXIV.

3rd Quarters. Year.	Death-rate per 1,000.	Mean temperature.	Rainfall.
1890	2.9	59.7°F	9.09in.
1891	0.8	57.8 „	11.83 „
1892	2.3	60.4 „	12.42 „
1893	2.5	61.8 „	8.96 „
1894	0.5	57.0 „	10.99 „
1895	2.5	59.5 „	9.96 „
1896	2.4	58.9 „	11.37 „
1897	2.6	59.3 „	14.30 „
1898	2.6	60.3 „	5.82 „
1899	3.2	63.3 „	5.37 „

From the preceding table it will be seen that of the 150 deaths from diarrhoea in the third quarter of the year 123 occurred amongst children under one year of age. Amongst those under one year of age 40.6 per cent. were between the ages of six and twelve months, 33.3 per cent. between three and six months, and 26.0 per cent. under three months old.

The Metereological tables show generally that the fatality from diarrhoea is much influenced by the temperature and rainfall, and that a cool and wet summer results in a low rate of mortality.

During the past summer the temperature was considerably above the average, and was the highest during the past ten years, the rainfall was the lowest, and these conditions undoubtedly influenced the diarrhoeal mortality, which was the highest during the same period.

It is only right to mention that during the year 187 deaths were registered from enteritis, and that 174 of these were amongst children under five years of age. As the majority of these deaths occurred during the third or summer quarter of the year, many of them should more correctly be classed with diarrhoea and amongst the zymotic group, instead of being classed, as at present, amongst the affections of the digestive system. It is to be regretted that this method of certification seems to be universally on the increase, with the result of seriously impairing the value of the statistics relating to a class of disease of considerable importance from a public health point

of view. It may not, therefore, be out of place to call attention to the recent decision of the Royal College of Physicians, of London, as given in the Annual Report of the Registrar-General for the year 1898 :—"The College is convinced, after careful enquiry, that various unauthorised and misleading terms, such as 'gastro-enteritis,' 'merco-enteritis,' 'gastric-catarrh,' are now commonly employed to designate the disease officially known as 'epidemic-diarrhœa,' whereby its specific character is in danger of being ignored . . . that this confusion of terms renders it impossible to determine accurately either the prevalence of the disease in special places and at special times, the extent to which it influences the public health, or the effects produced by sanitary measures. As the result of much deliberation the College has agreed to authorise the use of the term 'epidemic-enteritis' (or if preferred by the practitioner 'zymotic-enteritis') as a synonym for epidemic-diarrhœa." The College has further decided to urge upon practitioners the entire disuse, in medical certificates of death, of such terms as "gastro-enteritis," "merco-enteritis," or "gastric-catarrh" as synonyms of epidemic-diarrhœa.

TUBERCULOSIS.—Acting upon the instructions of the Health Committee, your Medical Officer of Health made a report upon the prevention of Tuberculosis. This report appeared in the Annual Report for 1898, and contained certain recommendations, which may be summarised under the following heads :—

"(1) *To prevent the spread of infection amongst human beings—*

"(a) The adoption of a system of voluntary notification of cases of tuberculosis.

"(b) The disinfection by the Sanitary Authority of rooms and articles infected by "tuberculous patients.

"(c) The distribution by the Sanitary Authority of printed instructions relating to "the infectious nature of the disease.

"(d) The continuance of general sanitary improvements, more especially the prevention "of over-crowding, the improvement of ventilation of public and private buildings, "and the prevention of dampness in dwellings.

"(2) *To prevent the spread of tuberculosis by means of meat or milk—*

"(a) By encouraging the use of the tuberculin test, and the separation of the unhealthy "from the healthy animals of Stock Owners and Cow-keepers.

"(b) By the adoption of powers similar to those contained in the Glasgow Police Act.

"(c) By continuing and possibly extending the present system of meat inspection by "qualified Meat Inspectors in your public slaughter-houses.

"(d) By the strict enforcement of cleanliness in these places, and in all cowsheds, dairies "and milk shops.

"(3) *The establishment of a public health laboratory, in conjunction with other public bodies, for the bacteriological diagnosis of the disease.*"

This report was adopted, and I have now the satisfaction of recording that it has been acted on since last October. It is obvious that, without some machinery for bringing cases of tuberculosis to the knowledge of the Sanitary Authority, the remainder of the recommendations cannot successfully be carried out. It is to be regretted, therefore, that comparatively little response has been made by the medical practitioners in the town to the invitation to send notice of such cases to the Medical Officer of Health—an invitation sent out after an influential deputation from the Cardiff Medical Society had waited upon the Health Committee and expressed their entire approval of this and the other measures which the Sanitary Authority proposed to carry out. The Sanitary Authority has to rely, therefore, upon the voluntary co-operation of medical men attending cases of pulmonary tuberculosis, and of the relatives of those persons who have died from the disease. But, from whatever source the information is received, the residence in which the disease has occurred is visited by the Medical Officer of Health, or by the inspector whose duty it is to attend to these cases. By this means insanitary conditions are frequently discovered which otherwise might have remained undetected—conditions which very often have a much closer relation to the disease in question than those found in connection with the diseases which come under the operation of the

Infectious Disease Notification Act. In every instance where a death from phthisis is registered an inspector calls and offers disinfection at the expense of the Sanitary Authority. In many cases this is carried out in this way, in others the householder prefers to do the work.

The result of the issue of these pamphlets was that during the fourth quarter of the year 15 notices of cases of pulmonary tuberculosis were received from medical practitioners, and 21 post cards were received from relatives of those who had died from this disease. In these cases the "Memoranda respecting the Prevention of Consumption" were left at the house, and disinfection was carried out by the sanitary authority. At the same time the authorities of public institutions were invited to insert clauses in their contracts for meat and milk which would have the effect of encouraging the use of the tuberculin test amongst cattle dealers and cow-keepers. The recommendation of the Medical Officer of Health relating to the adoption of powers based on the Glasgow Police Amendment Act, 1890, was taken into consideration by the Health Committee, and it was resolved to insert in the next Bill promoted by the Corporation clauses similar to those contained in that Act, and which relate to the protection of milk from the infection of the Tubercle Bacillus. Clauses were also framed based upon the recommendations of the Royal Commission on Tuberculosis, and providing for an improved system of meat inspection, more particularly of meat brought into the district from outside the borough. The suggestion that a Public Health Laboratory should be established met with the approval of your Committee, and towards the end of the year arrangements were made with other authorities for carrying out systematically bacteriological investigations in connection with all branches of Public Health work.

The following is a Copy of the pamphlets issued by the Medical Officer of Health in connection with the prevention of Consumption.

TOWN HALL,
CARDIFF.

MEMORANDUM RESPECTING THE PREVENTION OF CONSUMPTION.

Consumption is a preventable and infectious disease.

In Cardiff, out of a total number of about 2,500 deaths annually from all causes, about 200 are due to Consumption of the Lungs or Phthisis.

Consumption is contracted by taking into the system the infectious germ of the disease, derived either from a person suffering from the complaint, or through milk and possibly meat from an infected animal.

The infectious germs of Consumption are found in large quantities in the sputum or expectoration of a consumptive patient, which, if allowed to dry and become dust, is exceedingly dangerous, and is then the chief means by which the disease is spread from person to person.

If the following precautions are carefully attended to, there is little risk of the disease spreading from an infected person:—

Consumptive persons should never spit upon the floor of any house, cab, omnibus, tramcar, railway carriage or other conveyance, nor in any street, church, or public buildings, but only in a special vessel or cup containing a little water, and not into any handkerchief, which has to be put into the pocket or retained.

The collected expectoration must be burnt or mixed with a strong disinfectant, and discharged into the drain of a W.C.

For wiping the mouth a rag or paper, which can afterwards be burnt, should be used.

Fresh air, sunlight, cleanliness, and plenty of nourishing food are most important preventives of Consumption.

All rooms occupied by consumptives should be thoroughly ventilated, well lighted, and dry. No chimney should ever be blocked up, and windows should be kept open as much as possible.

Consumptive persons should avoid crowded assemblies or rooms which are overheated or overcrowded, and should remain in the open air as much as possible.

Milk, especially that used for children and invalids, should be boiled, and meat should be well cooked.

Rooms, passages, and staircases should be kept scrupulously clean, but dust should not be stirred up, damp dusters, tealeaves, or sawdust should be used for sweeping the floor. After use, dusters should be boiled, and the tealeaves or sawdust burned.

Any nuisance or sanitary defect should be at once reported to the Inspector of Nuisances, Town Hall, Cardiff, and in the event of a death or of removal of a consumptive person application should be made to the Inspector to have the rooms disinfected. This will be carried out by the Sanitary Authority free of cost.

(Signed) EDWARD WALFORD, M.D.,

Medical Officer of Health.

To Medical Practitioners.

TOWN HALL, CARDIFF.

DEAR SIR,

THE PREVENTION OF TUBERCULOSIS.

Acting upon the Report of the Medical Officer of Health, and with the approval of the Medical Society of Cardiff, the Health Committee of the Cardiff Corporation have decided to carry out as far as possible the recommendations contained in that report, a copy of which, if not already forwarded to you, can be obtained on application to the Medical Officer of Health. I am, therefore, directed by the Committee to ask you to be kind enough to notify to me cases of pulmonary tuberculosis which may come under your professional care, and in which you are of opinion that the action and assistance of the Sanitary Authority would be advisable, more particularly those cases in which sanitary defects require to be dealt with on the premises occupied by the patient, where the disinfection and cleansing of infected rooms or articles would be an advantage, or where printed instructions would be of use, as the Sanitary Committee are prepared to undertake this work free of cost. The Committee will also issue pamphlets to occupiers of houses in which deaths from consumption have taken place, calling attention to the infectious nature of the disease, and offering disinfection of infected premises and articles, and they would be glad of your co-operation in persuading such occupier to have such disinfection carried out.

I am further instructed to inform you that the Committee are making arrangements for the bacteriological examination of the sputa of patients, and that when such arrangements are complete notice will be sent to you with all necessary particulars. Forms for the notification of cases of Phthisis are enclosed herewith.

I am, dear Sir,

Yours faithfully,

EDWARD WALFORD,

Medical Officer of Health.

To Dr.

TOWN HALL, CARDIFF.

To the Occupier of

SIR OR MADAM,

PREVENTION OF CONSUMPTION.

I beg to direct your attention to the recognised fact that consumption (Phthisis) is an infectious and preventable disease, communicable from person to person chiefly by means of the

dust of rooms occupied by persons suffering from this complaint. In connection with the death from this disease which has recently occurred at No.

I have to inform you that the rooms recently occupied by the deceased invalid should be thoroughly disinfected and cleansed before being used again, and that the Sanitary Authority will, free of cost, disinfect the infected rooms and their contents.

Kindly advise me, on the enclosed post-card, when it will be convenient for the Disinfectors to call and carry out the necessary disinfection.

I am, your obedient Servant,

EDWARD WALFORD,

Medical Officer of Health.

TOWN HALL, CARDIFF.

TUBERCULOSIS IN DAIRY STOCK.

To Dairymen, Cowkeepers, and Purveyors of Milk.

Your attention is particularly directed to the "Dairies, Cowsheds and Milkshops Orders," and to the regulations made under these Orders, copies of which you have already received.

The recent "Order" of 1899 provides that, Milk from a Cow suffering from Tubercular Disease of the Udder, shall not be used for human food under a penalty of £5 0s. 0d.

Tuberculosis, known as consumption, is an infectious disease, which is spread by the introduction of the Tubercle Bacillus into the bodies of healthy animals along with food or drink and in other ways.

Tuberculous animals discharge by coughing, and in other ways, the infectious germs of the disease. Such animals should, therefore, be separated from the healthy stock.

Although, in the advanced stage, the disease may be detected by the symptoms, in most cases the Tuberculin Test is the most certain method of discovering the existence of Tubercle.

You are, therefore, advised to have the Test applied to your Cows by a Veterinary Surgeon, who will advise as to the steps which should be taken with regard to the reacting Cows.

The Test will be applied free of cost to any Cow belonging to any Cowkeeper within the Borough of Cardiff, by the Veterinary Surgeon to the Cardiff Corporation, on written application to the Medical Officer of Health, Town Hall, Cardiff.

It should be clearly understood that the Tuberculin Test should only be applied under the supervision of a Veterinary Surgeon.

In order to prevent the spread of Tuberculosis amongst Cattle, it is necessary :—

- (1) To remove from the Cowshed any animal reacting to the Tuberculin Test and to cleanse and disinfect the Cowshed.
- (2) To thoroughly ventilate the Cowshed, not to allow overcrowding, and to keep the animals and shed scrupulously clean.
- (3) To remove all dung or refuse matter without delay from the shed.

Tubercular Disease of the Udder of the Cow may be suspected if there is any painless lump or enlargement of that organ. Notice of this should be at once sent to the Medical Officer of Health.

(Signed) EDWARD WALFORD, M.D.,

Medical Officer of Health.

Table XXV. Death-rates in large Towns per 1,000 living from All Causes, and from the Principal Zymotic Diseases, and Infant Mortality, in the Ten Years 1889-98, and in 1899. Compiled from Registrar General's Annual Summary.

CITIES AND BOROUGH.	All Causes.		Small-pox.		Measles.		Scarlet Fever.		Diphtheria.		Whooping Cough.		Fever.		Diarrhoea.		Deaths under One year to 1000 Births.	
	Ten years 1889-98.	1899.	Ten years 1889-98.	1899.	Ten years 1889-98.	1899.	Ten years 1889-98.	1899.	Ten years 1889-98.	1899.	Ten years 1889-98.	1899.	Ten years 1889-98.	1899.	Ten years 1889-98.	1899.	Ten years 1889-98.	1899.
	20-3	20-2	0-01	0-01	0-60	0-46	0-23	0-13	0-32	0-40	0-51	0-38	0-20	0-22	0-92	1-21	170	181
33 Towns	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
London ..	19-6	19-8	0-01	0-00	0-62	0-47	0-21	0-09	0-49	0-43	0-54	0-38	0-14	0-18	0-72	0-93	157	167
West Ham ..	17-2	16-7	0-05	—	0-60	0-68	0-22	0-06	0-47	0-61	0-51	0-34	0-22	0-26	0-81	1-35	137	197
Croydon ..	14-5	15-0	0-00	—	0-36	0-14	0-07	0-13	0-29	0-39	0-31	0-10	0-10	0-07	0-55	0-89	133	154
Brighton ..	17-4	19-0	—	—	0-41	0-01	0-07	0-08	0-16	0-50	0-31	0-15	0-12	0-20	0-71	1-56	151	173
Portsmouth ..	17-2	19-7	0-00	—	0-47	0-27	0-10	0-11	0-19	0-64	0-33	0-33	0-23	0-40	0-84	1-76	152	197
Plymouth ..	20-4	21-7	0-01	—	0-55	0-11	0-48	0-03	0-16	0-20	0-46	0-51	0-14	0-07	0-70	1-01	169	190
Bristol ..	18-5	18-2	0-02	—	0-53	0-10	0-13	0-04	0-14	0-10	0-47	0-37	0-12	0-11	0-58	1-11	148	188
Cardiff ..	17-9	15-4	0-00	—	0-37	0-06	0-18	0-02	0-33	0-33	0-45	0-64	0-18	0-10	0-83	0-91	163	184
Swansea ..	19-1	18-1	0-00	—	0-55	0-14	0-48	0-11	0-20	1-36	0-47	0-27	0-18	0-08	0-39	0-71	163	166
Wolverhampton ..	22-1	21-8	0-01	—	0-41	0-02	0-25	0-07	0-34	0-19	0-40	0-25	0-24	0-52	1-32	1-51	191	184
Birmingham ..	20-8	20-8	0-05	—	0-50	0-38	0-23	0-06	0-22	0-29	0-55	0-32	0-17	0-24	1-18	1-67	184	191
Norwich ..	19-0	17-3	—	—	0-41	0-04	0-10	0-16	0-19	0-35	0-41	0-41	0-26	0-18	0-96	1-36	178	179
Leicester ..	18-1	17-7	0-01	—	0-46	0-13	0-21	0-20	0-17	1-06	0-34	0-42	0-19	0-14	1-54	1-36	198	195
Nottingham ..	18-6	20-0	0-00	—	0-39	0-58	0-19	0-23	0-07	0-13	0-42	0-23	0-27	0-48	1-04	1-68	176	210
Derby ..	17-4	16-9	0-02	—	0-37	0-22	0-13	0-24	0-13	0-08	0-36	0-08	0-20	0-14	0-76	0-89	155	162
Birkenhead ..	19-4	19-2	0-00	—	0-55	0-44	0-16	0-06	0-22	0-21	0-49	0-77	0-32	0-43	0-82	0-74	169	186
Liverpool ..	25-6	26-4	0-01	0-00	0-68	0-50	0-44	0-26	0-18	0-34	0-61	0-49	0-35	0-31	1-24	1-87	191	198
Bolton ..	22-2	19-9	0-01	—	0-78	0-61	0-28	0-22	0-12	0-09	0-61	0-27	0-29	0-35	1-32	1-67	179	181
Manchester ..	24-4	24-6	0-01	—	0-82	1-30	0-32	0-08	0-24	0-15	0-56	0-42	0-25	0-14	1-21	1-63	187	206
Salford ..	24-3	23-8	0-01	—	0-97	0-97	0-44	0-23	0-39	0-34	0-70	0-46	0-25	0-35	1-51	1-37	200	209
Oldham ..	21-3	20-5	0-09	—	0-72	0-32	0-22	0-31	0-14	0-16	0-52	0-36	0-16	0-13	0-67	0-88	181	198
Barnley ..	20-5	19-6	0-01	—	0-65	0-78	0-24	0-67	0-25	0-23	0-34	0-66	0-26	0-22	1-33	1-79	208	269
Blackburn ..	22-0	19-1	0-01	—	0-90	0-31	0-20	0-17	0-07	0-53	0-44	0-39	0-25	0-30	1-33	0-97	202	189
Preston ..	24-4	22-8	0-00	—	0-92	0-38	0-19	0-09	0-12	0-33	0-58	0-50	0-33	0-33	2-10	2-30	237	255
Huddersfield ..	18-0	16-2	0-00	—	0-42	0-11	0-22	0-06	0-13	0-05	0-33	0-55	0-13	0-20	0-37	0-82	158	152
Halifax ..	19-1	18-3	0-06	—	0-44	0-13	0-14	0-27	0-15	0-15	0-27	0-23	0-17	0-25	0-30	0-47	159	159
Bradford ..	19-4	18-4	0-07	—	0-44	0-32	0-23	0-45	0-07	0-11	0-44	0-28	0-16	0-20	0-91	0-97	174	181
Leeds ..	20-6	19-1	0-01	—	0-55	0-37	0-20	0-15	0-16	0-78	0-41	0-38	0-23	0-17	1-12	0-94	179	171
Sheffield ..	21-3	22-2	0-00	—	0-99	0-61	0-31	0-25	0-18	1-28	0-53	0-16	0-25	0-51	1-31	1-58	183	194
Hull ..	19-9	19-3	0-01	0-60	0-50	0-51	0-16	0-17	0-12	0-38	0-38	0-62	0-25	0-18	1-43	1-46	177	175
Sunderland ..	22-1	21-5	0-01	—	0-63	0-28	0-21	0-25	0-08	0-06	0-47	0-39	0-52	0-38	1-26	1-14	176	175
Gateshead ..	19-9	18-8	0-01	—	0-64	0-20	0-21	0-12	0-14	0-08	0-54	0-43	0-22	0-14	1-09	1-12	172	177
Newcastle ..	20-8	20-6	0-00	—	0-45	0-35	0-14	0-11	0-19	0-13	0-52	0-38	0-17	0-10	0-86	0-75	172	193

TABLE XXVI.

Death-rate per 1,000 from all causes and from zymotic diseases in Cardiff and in 33 large towns.

	Ten Years—1889-1898.		Year 1899.	
	Cardiff.	33 Large Towns.	Cardiff.	33 Large Towns.
All Causes	17·9	20·3	15·4	20·2
Small Pox	0·00	0·01	—	0·01
Measles	0·37	0·60	0·06	0·46
Scarlet Fever	0·18	0·23	0·02	0·13
Diphtheria	0·37	0·32	0·33	0·40
Whooping Cough	0·45	0·51	0·64	0·38
†Fever	0·14	0·20	0·10	0·22
Diarrhœa	0·83	0·92	0·91	1·21

† Chiefly Typhoid, but including Typhus and simple or ill-defined continued fevers.

TABLE XXVII.

Cases of Infectious Disease notified in the Cardiff Urban Sanitary District since the adoption of the Infectious Disease Notification Act, 1889.

	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899
Small Pox	—	9	5	4	10	1	45	7	—	—
Diphtheria	63	67	155	462	326	229	296	512	940	628
Croup	9	3	9	17	17	19	10	4	20	12
Scarlet Fever	335	685	1,851	816	577	484	874	758	332	184
Enteric Fever	152	130	118	105	62	79	74	117	80	94
Typhus Fever	—	—	—	41	1	—	1	—	—	—
Erysipelas	45	52	95	152	135	132	134	163	133	176
Puerperal Fever	4	10	12	24	19	17	21	12	18	13
Total	608	956	2,245	1,621	1,147	961	1,455	1,573	1,523	1,107

TABLE XXVIII.—Analysis of Deaths in the Municipal Borough of Cardiff in the Registration Sub-districts, and in each Ward in the Borough during the Year 1899.

LOCALITIES.	Population, 1899.	Area in Acres.	Persons per Acre.	Total Births.	Birth-rate.	Total Deaths.	Death-rate.	Deaths under One Year per 1,000 Births Registered.	Seven Chief Zymotic Diseases.		Principal Zymotic Diseases.												Tubercular Meningitis, and other Forms of Tuberculosis.				Pneumonia.		Deaths of Respiratory Organs.					
									Deaths.	Death-rate.	Small Pox.	Measles.	Scarlatina.	Diphtheria.		Whooping Cough.	Typhoid Fever.		Typhus Fever.	Diarrhoea.		Deaths.	Death-rate.	Deaths.	Death-rate.									
														Deaths.	Death-rate.		Deaths.	Death-rate.		Deaths.	Death-rate.					Deaths.	Death-rate.	Deaths.		Death-rate.	Deaths.	Death-rate.		
Borough of Cardiff	185,826	8,351	22.2	5,309	28.5	2,858	15.3	183	384	2.06	..	..	12	.06	3	.01	61	.03	120	.06	19	.01	..	..	169	.08	119	.06	208	1.1	519	2.7
Central Cardiff	Registration Sub-district.	Canton Ward	21,618	449	48.1	873	40.3	303	14.0	122	47	2.1	..	..	..	..	3	.01	9	.04	2	.09	..	..	33	1.5	15	.06	22	1.0	56	2.5
		Riverside Ward	18,857	313	60.2	208	11.0	220	11.6	384	22	1.1	..	..	..	..	2	.01	3	.01	3	.01	..	..	14	.07	8	.04	14	.07	45	2.3
		Grange Ward	20,203	1,905	10.6	803	39.7	331	16.3	195	58	2.8	7	.03	2	.09	19	.09	3	.01	27	1.3	9	.04	22	1.0	71	3.5
		West Cardiff	60,678	2,667	22.7	1,884	31.0	854	14.0	182	127	2.0	7	.01	7	.01	31	.05	8	.01	74	1.2	32	.03	58	.9	172	2.8
Central Cardiff	Registration Sub-district.	South Ward	11,774	519	22.6	266	22.5	179	15.2	233	21	1.7	..	..	..	..	5	.04	11	.09	..	..	..	..	5	.04	4	.03	15	1.2	39	3.3
		Central Ward	13,605	473	28.7	304	22.3	194	14.2	161	16	1.1	1	.07	3	.02	3	.02	1	.07	8	.05	12	.08	9	.06	36	2.6
		Ordnance Ward	18,637	369	50.5	616	33.0	265	14.2	180	41	2.1	1	.05	2	.01	13	.06	1	.05	24	1.2	19	1.0	17	.9	50	2.6
		Adamsdown	13,573	1,570*	8.6	431	31.7	282	20.7	199	26	1.9	4	.02	9	.06	13	.9	6	.04	15	1.1	60	4.4
Central Cardiff	..	57,589	2,931	19.6	1,617	28.0	920	15.9	190	104	1.8	2	.03	14	.02	36	.06	2	.03	50	.8	41	.07	56	.9	185	3.2	
Central Cardiff	Registration Sub-district.	Splott Ward	17,115	1,454	11.7	640	37.3	242	14.1	162	32	1.8	2	.01	8	.04	11	.06	11	.06	12	.07	15	.08	45	2.6
		Roath Ward	14,875	766	19.4	446	30.0	226	15.1	199	43	2.8	2	.01	26	1.7	1	.06	14	.9	13	.8	13	.8	46	3.0	
		Park Ward	25,789	533	48.3	663	25.7	285	11.0	171	41	1.5	5	.01	16	.06	1	.03	19	.7	16	.06	15	.05	40	1.5	
		East Cardiff	57,779	2,753	20.9	1,749	30.2	753	13.0	175	116	2.0	2	.03	15	.02	53	.09	2	.03	44	.7	41	.07	43	.7	131	2.2
Infectious Diseases Hospital	..	..	..	..	..	36	..	..	35	..	..	..	1	..	3	..	24	..	..	..	7	..	..	..	..	..	..	..	..	..	..	..
Union Workhouse	..	..	..	59	..	206	..	288	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	49	..	29	..
Infirmary	..	..	..	..	..	84	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	3	..	2	..	2	..
Seamen's Hospital	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

The population in the above Table is, in the case of the Borough, that given by the Registrar General, as the estimate to the middle of the Year 1902. The populations of the Registration Sub-districts and Wards are estimated on the basis of the number of inhabited houses, allowing an average of 6.29 persons to each house.

* In addition to the above the water area of the Docks is 103 acres, and included in this total of 8,459 acres are 2,000 of water and foreshore.

TABLE XXIX.—Shows the number of Infectious Diseases reported in the Cardiff Urban Sanitary District under the Notification Act, and Deaths during each quarter in the year, 1899.

	Small Pox.		Cholera.		Diphtheria.		Croup.		Erysipelas.		Scarlet Fever.		Typhoid Fever.		Typhus Fever.		Puerperal Fever.		Relapsing Fever.		Continued Fever.	
	Deaths.	Cases Reported.	Deaths.	Cases Reported.	Deaths.	Cases Reported.	Deaths.	Cases Reported.	Deaths.	Cases Reported.	Deaths.	Cases Reported.	Deaths.	Cases Reported.	Deaths.	Cases Reported.	Deaths.	Cases Reported.	Deaths.	Cases Reported.	Deaths.	
First Quarter	—	—	—	—	19	236	4	3	1	55	—	42	—	9	—	—	—	—	—	—	—	
Second "	—	—	—	—	6	108	—	2	4	41	—	31	2	8	—	—	2	5	—	—	1	
Third "	—	—	—	—	18	132	2	3	5	29	—	42	12	45	—	—	1	3	—	—	3	
Fourth "	—	—	—	—	18	152	—	4	—	51	3	69	5	32	—	—	2	2	—	—	4	
Year 1899	—	—	—	—	61	628	6	12	10	176	3	184	19	94	—	—	5	13	—	—	8	

TABLE XXX.

ANNUAL RATES OF MORTALITY FROM ALL CAUSES AND FROM SEVERAL CLASSES OF DISEASES
PER 1,000 PERSONS LIVING IN CARDIFF AND IN ENGLAND AND WALES.

Year.	All Causes.		Zymotic Diseases.		Constitutional Diseases.		Developmental Diseases.		Local Diseases.	
	Cardiff.	England and Wales.	Cardiff.	England and Wales.	Cardiff.	England and Wales.	Cardiff.	England and Wales.	Cardiff.	England and Wales.
1888	20·3	18·11	2·9	2·13	3·30	3·16	2·94	1·56	9·27	9·64
1889	19·4	18·22	2·1	2·45	3·69	3·22	1·44	1·55	9·16	9·39
1890	21·1	19·54	2·4	2·53	3·49	3·37	1·69	1·61	10·10	10·36
1891	22·0	20·21	2·1	2·70	3·64	3·33	1·36	1·69	11·39	10·80
1892	18·7	18·98	2·7	2·78	3·51	3·16	1·24	1·62	7·79	9·80
1893	19·6	19·17	2·8	3·16	3·47	3·21	1·25	1·59	8·26	9·53
1894	16·2	16·59	1·7	2·25	3·14	3·01	1·20	1·46	7·28	8·42
1895	18·2	18·72	2·0	2·82	3·14	3·16	1·25	1·67	8·42	9·43
1896	16·8	17·10	2·2	2·54	2·62	3·00	1·18	1·53	8·43	8·53
1897	14·9	17·43	2·1	2·59	2·72	3·06	1·04	1·61	6·73	8·65
1898	14·8	17·58	2·2	2·76	2·63	3·06	1·11	1·62	6·53	8·65
1899	15·3	Not yet published.	2·0	Not yet published.	2·45	Not yet published.	1·16	Not yet published.	7·20	Not yet published.

TABLE XXXI.—The following Tables show the Distribution of Mortality from the Seven Chief Zymotic Diseases, from Phthisis, from Diseases of the Respiratory Organs, and from other causes, in each Street in the Borough, during the year 1899:—

CENTRAL WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Bridge Street & Little Bridge Street	9	9
Blackweir Terrace	1	1	2
Bakers Row	1	1
Bute Street and Terrace	1	..	..	..	1	4	6
Castle Street	1	1
Canal Street	1	..	..	1	2
Caroline Street	1	1
Canal Parade and Bank	1	..	..	..	..	1	2
Column Road and Place	6	6
Cross Street	1	1
Charles Street	8	8
Duke Street	1	1
David Street	1	5	6
Dumfries Place	1	..	1
Eisteddfod Street	1	..	2
Evans Court	1	1
East Terrace	1	2	3
Edward Street, Terrace and Place	1	..	1	3	5
Ebenezer Street	2	1	3
Friends Place	1	1
Frederick Street	1	..	1	2	4
G.W.R. Station	1	1
Giles Court	1	1
Havelock Street	1	2	..	3
Homfray Street	1	..	2	3	6
Glamorgan Canal	3	3
Hills Terrace and Street	1	..	..	..	..	1	1	3
Hayes	1	1	2
Love Lane	1	..	1	2	4
Little Frederick Street	1	..	3	2	6
Millicent Street	1	8	9
Mathews' Court	1	1
Mary Ann Street	1	3	4
Nazareth House	3	2	9	14
North Road	1	1	2	4
Park Place	1	..	..	..	..	1	2	4
Park Grove	1	1
Park Street	1	1
Queen Street	1	1
Raven Street	..	1	..	..	..	..	..	..	1	2	4
Row's Square	2	2
Rodney Street	2	2	3	7
Richmond Terrace	2	2
Scott Street	5	5
St. Mary Street	1	..	..	..	1	2	4
Station Terrace	2	2
St. Andrews Crescent	3	3
Tredegar Street	2	7	9
Union Street	1	..	1	1	1	1	3	8
Wood Street	1	2	3
Windsor Place	2	2
Westgate Street	1	1
West Wharf	1	1
Total	..	1	..	3	3	1	7	8	34	130	187

SOUTH WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Angelina Street	1	..	2	4	7
Alice Street	2	4	6
Adelaide Street and Place	1	..	3	4
Bute Street and Place	2	..	1	2	5	10	20
Bute Ship Yard	1	1
Bute Buildings	1	1
Bute Esplanade	1	..	..	..	..	..	1
Burt Street	2	2
Orichton Street and Place	1	..	4	5	5
Christina Street	1	2	6	9	9
Coram Terrace	1	1
Clarence Place and Embankment	1	..	..	..	7	8	8
Crawshay Street	1	1
Canal Parade	2	2	2
Dudley Street and Place	1	..	..	1	1	2	5
Eleanor Street	1	..	1	2
Evelyn Street	1	..	4	5	5
Francis Street	2	2	2
Glamorgan Canal	3	3	3
George Street	1	1	2
Hannah Street	1	..	1
Harrowby Street	1	1	2	2
Hodges Row	1	..	..	..	..	1	1
Herbert Street	1	..	1	2	2
Harpur Street	1	..	1	1
Hunter Street	1	..	..	..	1	2	4
Henry Street	2	..	2	2
Hamadryad Hospital	5	5	5
James Street	1	..	..	1	2	4	4
John Street	1	..	1	2	2
Louisa Street	1	..	..	2	1	3	7
Loudoun Square	1	1	3	5
Mount Stuart Square	3	3	3
Margaret Street	5	5	5
Maria Street	1	..	..	..	..	2	3	3
North Church Street	1	..	..	..	..	1	2	2
Nelson Street	1	1	2	4	4
Penarth Road and Terrace	1	..	..	..	3	2	6	6
Peel Street	3	1	4	4
Patrick Street	1	1	2	2	6
Pomeroy Street	2	..	..	1	..	1	4
South Church Street	1	..	..	..	..	..	1	1
South William Street	1	..	..	1	1	2	5	5
Sophia Street	1	1	2	2
Stuart Street	2	1	3	3
Timber Float	1	1	1
Tresillian Terrace	1	2	3	3
River Taff	2	2	2
Windsor Esplanade	1	..	1	1
West Church Street	4	4	4
Windsor Terrace	1	1	1
T. V. Railway	1	1	1
Total	5	11	..	5	15	38	110	184

CATHAYS WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Allen's Bank Road and Crescent	2	..	..	4	6
Alexander Street	1	1	1	..	3
Barracks	1	1
Bruce Street	1	1
Cairns Street	1	..	1	2	4	9	17
Cogan Terrace	1	1
Coburn Street	2	6	8
Crwys Road,	1	..	..	..	4	5	10
Cathays Terrace	1	2	..	2	12	17
Cranbrook Street	1	1	3	5
Catherine Street	2	3	5
Dalton Street	3	3
Dogfield Street	1	7	8
Daniel Street	1	..	2	2	5
Fanny Street	1	1	..	..	2
Flora Street,	4	4
Fitzroy Street	1	1
Florentia Street	1	1	1	3	6
George Street	1	1	5	7
Glynrhondda Street	1	1	2
Hirwain Street	1	..	1	4	6
Harriett Street and Place	1	..	..	1	..	..	..	..	5	7
Llanbleddian Gardens	1	..	1
Llantrisant Street	1	4	5
Letty Street,	1	..	1	1	3
Llantwit Street	1	2	2	5
Minny Street	1	..	..	6	7
Marlborough Terrace	1	..	1	1	3
Monthermer Road	1	..	..	..	..	..	1	2
Manor Street	1	..	1	2	4
Miskin Street	1	..	1	3	1	4	10
Malefant Street	2	2	4
Mundy Place	1	..	..	..	..	2	3
May Street	1	3	5	9
Merthyr Street	1	..	..	..	1	1	3
Norman Street	1	1
Rhymney Terrace	3	3
Richards Street	1	1	..	1	..	2	9	14
Ruthin Gardens	1	..	1	1	3
Robert Street	1	..	1	4	6
Spencer Street	1	1	4	6
Senghennydd Road	1	..	1	2
Salisbury Road	1	..	..	..	1	4	6
Thesiger Street	1	..	..	..	3	5	9
Talgarn Street	1	..	..	..	1	..	2
Treherbert Street	1	1	..	..	2
Tewkesbury Street and Place	2	..	..	..	1	3	6
Woodville Road	1	..	2	1	2	7	13
Whitchurch Place	1	1
Whitchurch Road	1	1	..	2	4
Totals	1	..	2	13	1	22	17	50	156	262

PARK WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Alfred Street	1	1	..	2	..	..	3	7
Albany Road	1	1	..	..	..	..	2	4
Arran Street	1	..	1	..	1	3
Angus Street	1	..	3	4
Anabella Street	1	1	2	10	13
Braeval Street	1	1
Bangor Street	2	..	..	..	..	3	5
Byron Street	2	2	4
Bedford Street and Place	3	..	1	1	3	8	16
Castle Road	1	..	2	..	2	6	11
Cowper Street	1	1	2
Cyfarthfa Street	1	..	..	..	4	5	10
Crofts Street	2	2
Clive Place	1	3	4
Crwys Road and Place	1	1	4	6
Convent	1	1	2
Donald Street	1	1	..	..	1	1	6	10
Daviot Street	1	..	..	..	1
Dianna Street	2	..	..	..	1	5	8
East Grove	1	1
Elm Street	2	2
Essich Street	1	..	..	..	1
Fair Oak Bridge	1	1
Glenroy Street	1	2	..	4	7
Gordon Road	3	3
Inverness Place	1	1	..	6	8
Kincaig Street	1	..	..	..	1	6	8
Keppoch Street	1	..	..	..	..	4	5
Lily Street	1	..	..	4	5
Lochaber Street	1	1
Montgomery Street	1	..	1	1	3
Moy Road	1	1	4	6
Milton Street	1	..	1	9	11
Mackintosh Place	1	..	3	..	1	8	13
Northcote Street	1	1
Newport Road	3	3
Oxford Street	1	..	..	1
Penline Street	2	2
Parade	1	1
Penywain Road	1	..	..	..	1
Penylan Quarry	1	1
Penylan	1	..	..	1
Plasnewydd Place and Road	2	2	7	11
Russell Street	1	4	5
Rose Street	1	..	..	2	3
Richmond Road and Crescent	1	..	..	..	..	1	14	16
St. Peter Street	2	2
Strathmairn Street	1	..	2	4	7
Southey Street	1	1
Shakespeare Street	1	..	..	..	..	2	6	9
Treharris Street	1	..	..	..	2	10	13
Tavistock Street	1	1	2
Talworth Street	2	2	4
Vere Street	1	1	2
Violet Row	2	..	..	1	3
Wellfield Road and Place	1	..	2	3
The Walk	2	2
Wordsworth Avenue	1	1
Woodland Place	1	1
Total	5	16	1	20	14	39	189	284

ADAMSDOWN WARD—Continued.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Tin Street	2	2
Tyndall Street	2	4	15	21
Victoria Street	1	..	..	1	2
Windsor Road	1	..	1	..	2
West Dock	3	3
Zinc Street	2	1	3
Total	5	9	..	13	18	63	269	377

RIVERSIDE WARD.

Ann Street ..	..	..	..	..	..	..	1	..	..	4	5
Berthwin Street ..	..	..	..	..	..	..	..	..	1	..	1
Beauchamp Street ..	..	..	..	..	..	..	..	..	..	4	4
Brook Street ..	..	..	..	..	1	..	..	..	..	1	2
Blackstone Street ..	..	..	..	..	..	..	1	..	..	..	1
Cowbridge Road ..	..	..	..	..	..	1	1	..	..	5	7
Craddock Street ..	..	..	..	1	1	..	..	..	2	10	14
Clare Road and Gardens ..	..	..	..	..	..	..	..	..	..	2	2
Lower and Cathedral Road ..	..	..	..	1	..	..	1	1	1	13	17
Dispenser Street and Gardens ..	..	..	..	..	..	..	..	..	..	4	4
De Burgh Street ..	..	..	..	..	..	..	..	1	..	1	2
Eldon Road ..	..	..	..	..	..	..	1	..	3	6	10
Fitzhamon Embankment ..	..	..	..	..	..	..	..	1	..	1	2
Gladstone Crescent ..	..	..	..	..	..	..	..	..	..	1	1
Gloucester Street ..	..	..	..	..	..	..	..	..	3	1	4
Green Street ..	..	..	..	..	..	..	..	1	..	3	4
Heath Street ..	..	..	..	..	..	..	..	..	..	1	1
Halket Street ..	..	..	..	..	..	..	..	1	..	..	1
Hamilton Street ..	..	..	..	..	..	..	..	1	1	5	7
Iestyn Street ..	..	..	..	..	..	..	..	..	..	1	1
King's Road ..	..	..	..	..	..	1	..	..	2	6	9
Kyvielog Street ..	..	..	..	..	..	..	..	..	..	1	1
Lewis Street ..	..	..	..	..	..	..	..	..	1	4	5
Mortimer Road ..	..	..	..	..	..	..	..	..	3	..	3
Mandeville Place and Street ..	..	..	..	..	..	..	..	..	2	2	4
Mark Street ..	..	..	..	..	..	..	..	..	1	1	2
Machen Place ..	..	..	..	..	..	..	..	1	..	4	5
North Morgan Street ..	..	..	..	..	..	..	..	..	1	1	2
Neville Street and Place ..	..	..	..	..	..	..	1	..	2	6	9
Plantagenet Street ..	..	..	..	..	..	..	..	1	2	3	6
Picton Place ..	..	..	..	..	..	..	..	..	..	3	3
Pitman Street ..	..	..	..	..	..	..	..	1	..	..	1
Plasturton Avenue and Place ..	..	..	..	..	..	1	..	..	..	5	6
Plasturton Gardens ..	..	..	..	..	..	..	..	..	1	1	2
River Taff ..	..	..	..	..	..	..	..	..	..	1	1
Rennie Street ..	..	..	..	..	..	..	..	..	1	1	2
Ryder Street ..	..	..	..	..	..	..	..	1	1	2	4
Rowden Place ..	..	..	..	..	..	..	1	..	..	2	3
Smeaton Street ..	..	..	..	..	..	..	2	..	..	..	2
Severn Road ..	..	..	..	..	..	..	..	1	2	1	4
South Morgan Street ..	..	..	..	..	..	..	..	..	..	1	1
Stephenson Street ..	..	..	..	..	..	..	..	..	1	1	2
Trevethick Street ..	..	..	..	..	..	..	..	..	..	3	3
Talbot Street ..	..	..	..	..	..	..	..	..	..	3	3
Telford Street ..	..	..	..	..	..	..	..	..	..	2	2
Tudor Road ..	..	..	..	..	..	..	1	..	1	4	6
Union Workhouse ..	..	..	..	..	..	..	1	49	30	126	206
Wellington Street ..	..	..	..	..	1	..	..	..	2	6	9
Wyndham Crescent ..	..	..	..	..	..	..	..	..	2	4	6
Wyndham Road ..	..	..	..	..	..	..	1	2	2	2	7
Wyndham Street ..	..	..	..	..	..	..	2	1	3	6	12
Wells Street ..	..	..	..	..	..	..	2	..	2	1	5
Total ..	..	..	..	2	3	3	16	63	73	266	426

CANTON WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Atlas Road and Place	1	1	3	5
Aldsworth Road	1	1	..	1	3
Alexandra Road	1	..	..	4	5
Albert Street	2	1	4	5	12
Brunswick Street	1	..	..	..	1	3	5
Brecon Street	2	2	4
Bloom Street	1	1
Beda Road	1	1
Carmarthen Street	4	4
Clive Road	1	..	1	8	10
Church Road	1	1
Coke Street	3	3
Cowbridge Road	2	..	3	15	20
Cardigan Street	1	..	2	3
Conybeare Road	1	..	..	..	..	1
Cumberland Street	1	1	..	2
Conway Road	1	1	1	3
Denton Road	1	..	..	..	1	2
Daisy Street	1	1	1	3
Eldon Road	1	1	..	1	3
Evans Terrace	2	..	2
Ethel Street	4	3	7
Forrest Road	2	1	1	3	7
Glynne Street	3	5	8
Glamorgan Street	2	..	..	..	3	5	10
Hanover Street	1	..	..	..	1	2
Harvey Street	2	..	1	1	..	1	5
Gray Street	2	1	1	3	7
Ivy Street	1	1
Leekwith Road	1	..	3	3	7
Lyndhurst Street	4	4
Lyttleton Street	2	..	2
Llandaff Road	1	1	6	8
Loftus Street	1	1
Lionel Road	1	1	2
Lincoln Street	1	1	3	5
Major Road	1	..	1
Mortimer Road	1	..	2	3
Llanfair Road	2	..	4	6
Nottingham Street	1	..	..	..	..	2	3
Norfolk Street	1	..	..	3	4
Market Road	3	3
Meadow Street	1	1
Nesta Road	1	..	1	..	..	..	2
Picton Place	1	..	..	5	6
Purbeck Street	2	2
Pontcanna Street, Terrace and Place	2	..	1	5	8
Philip Street	1	1
Penypeel Road	1	3	4
Pembroke Road	4	2	..	5	11
Rolls Street	1	..	2	3	6
Railway Terrace	1	..	1	1	3
Rectory Road	1	..	..	..	..	..	2	3
Radnor Road	1	2	1	2	6
Romilly Road and Crescent	1	1	..	..	..	..	6	8
Surrey Street	1	1
Stag Terrace	1	..	..	..	..	..	1
Severn Road	2	..	3	3	8
St. John's Crescent	1	1
St. David's Field	1	1
Springfield Place	1	..	..	4	5
Thornhill Street	1	1
Tintern Street	1	1
Theobald Gardens	3	3
Turner Road	3	3
Westmoreland Street	1	..	..	..	..	1	5	7

CANTON WARD.—Continued.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Turberville Place	1	1
Wells Street	1	..	..	2	3
Wellington Street	1	1	3	4	9
Westbury Terrace	1	..	1	2
William Street	1	..	1	1	3
T. V. R. Goods Yard	1	1
Total	3	9	2	33	22	52	180	301

ROATH WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Agate Street	1	..	..	..	..	2	3
Arthur Street	1	..	1	..	1	5	8
Albany Road	1	1
Bradley Street	3	3
Bertram Street	1	..	..	..	2	4	7
Blanche Street	1	..	..	..	..	..	3	4
Booker Street	1	1
Beresford Road	1	..	..	2	..	2	4	9
Broadway	1	..	3	1	1	12	18
Connaught Road	1	1	2	4
Croft Street	2	..	..	..	..	..	2
Cecil Street and Crescent	1	..	..	..	2	6	9
Clifton Street	1	..	..	..	2	2	5
Cottrell Road	1	..	1	..	..	2	4
Klaude Road	1	..	1	..	..	9	11
Diamond Street	3	5	8
Emerald Street	2	..	..	..	3	6	11
Elm Street	1	1	3	5
Fox Street	1	1
Harold Street	2	..	..	..	1	4	7
Helen Street	1	..	1	1	1	4	8
Nora Street	3	..	2	3	2	4	14
Newport Road	1	..	4	5
Oakfield Street	3	3
Princes Street	1	..	..	1
Partridge Road	1	..	..	1
Pearl Street, Place and Crescent	3	1	1	..	9	15	29
Penylan	1	1
Ruby Street	1	4	5	10
Richards Terrace	2	..	..	1	2	4	9
Sapphire Street	1	..	3	4
Spring Gardens Place and Terrace	1	..	..	..	5	2	8
Stacey Road	2	2
Theodora Street	2	..	1	1	4
Topaz Street	2	..	..	1	2	2	7
Total	2	26	1	14	13	46	125	227

GRANGETOWN WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Avoca Place	1	1
Andrews' Terrace	1	1	2	3
Allerton Street	1	1	..	1	1	3	7
Amherst Street	1	1	6	9
Blaenclydach Street	1	..	1	3	4
Bradford Street	1	..	1	2	4
Bishop Street	1	..	..	..	..	1	..	2	2
Bromsgrove Street	1	2	3
Bedwas Street	1	1	1
Corporation Road	1	1	2	2	3	3	9	17
Clive Street	..	1	..	1	1	2	3	6	14	27	27
Cambridge Street	3	3	3
Compton Street	1	1	1	1
Cornwall Road	1	..	2	1	7	11	11
Clare Road	1	1	2	2	7	13	13
Coedcae Street	1	3	4	4
Clydach Street	1	1	1
Cymmer Street	1	1	1
Court Road	5	3	8	8
Chester Street and Place	2	..	..	2	4	4
Dorset Street and Place	1	3	4	6	13	13
Devon Street and Place	..	1	..	..	..	2	..	1	3	7	7
Durham Street	..	1	..	..	..	..	1	..	1	3	3
Ely River	2	2	2
Earl Street	2	5	7	7
Ferry Road	2	2	4	4
Ferndale Street	1	2	..	1	1	5	5
Holmesdale Street	2	..	..	1	1	4	4
Hewell Street	1	2	3	6	6
Hereford Street	1	..	1	7	9	9
Kent Street	2	1	..	2	2	7	7
Knole Street	2	..	1	..	1	2	6	6
Llanmaes Street	1	..	2	1	4	4
Ludlow Street	1	..	..	..	1	2	4	4
Monmouth Street	1	1	1
Machen Street	2	2	2
Madras Street	..	1	..	..	..	..	..	1	..	2	2
Llanbradach Street	2	2	2
Newport Street	1	..	..	..	1	1
North Street	1	..	1	..	2	2
Oakley Street	1	..	3	..	..	6	10	10
Penhevad Street	2	3	4	9	9
Penarth Road	..	1	1	2	..	..	..	3	13	20	20
Pentrebane Street	1	..	..	1	2	5	9	9
Paget Street	1	..	1	..	..	2	4	4
Redlaver Street	1	..	..	..	..	2	3	3
River Taff	2	2	2
Rookwood Street	2	2	2
Rutland Street	1	1	2	2
Sevenoak Street	2	2	2
St. Fagans Street	1	..	1	2	4	4
Somerset Street	1	..	3	5	9	9
Stoughton Street	1	4	5	5
Saltmead Road	..	1	..	..	..	..	..	2	4	7	7
Stockland Street	1	..	1	..	2	5	9	9
Sanatorium	..	1	3	24	..	7	..	..	1	36	36
Sea View	1	1	2	2
Tynant Street	1	1	1	1
Thomas Street	1	..	..	1	1	4	7	7
T.V.R. Railway	1	1	1
Wedmore Road	..	1	..	..	..	..	..	..	2	3	3
Warwick Street	1	1	1	4	7	7
York Place	1	1	1
Total	..	8	3	26	19	10	27	19	70	188	370

SPLOTT WARD.

NAME OF STREET.	Small-pox.	Measles.	Scarlet Fever.	Diphtheria.	Whooping Cough.	Fever.	Diarrhoea.	Phthisis.	Respiratory Diseases.	Other Causes.	Total.
Aberdovey Street	1	..	..	..	..	..	3	5
Adeline Street	1	..	..	2	..	1	7	11
Aberystwith Street	2	2	3
Barnaby Street	1	..	..	1	..	1	3	6
Bridgend Street	1	..	..	..	1	5	7
Cameron Street	2	2
Coveny Street	1	..	..	1	2	1	5
Caerphilly Street	1	2	3
Cornelia Street	1	..	..	1	2
Carlisle Street	2	..	2	..	3	12	19
Enid Street	2	2	4
Eyre Street	4	4
Florence Street	1	1
Habershon Street and Place	1	..	..	2	1	15	19
Gwendoline Street	1	1
Howard Street and Place	1	..	..	..	..	..	..	..	..	1
Hinton Street	3	3
Janet Street	1	1	..	..	1	3	4	10
Layard Street	1	..	1	1	3
Llanelly Street	1	..	..	..	..	..	4	5
Moorland Road	5	4	9
Marion Street	1	..	..	..	3	6	10
Milford Street	1	..	..	..	..	..	2	3
Moors	1	1
Menelaus Street	1	..	1	4	6
Ordell Street	2	3	7	12
Portmanmoor Road	1	5	9	15
Pontypridd Street	2	..	1	6	9
Railway Street	1	..	..	2	..	1	2	3	16	25
Runney River	1	1
Swinton Street	1	..	..	..	..	..	..	1
Sanquahar Street	1	..	1	2
Seymour Street	1	..	..	..	1	..	2	4
Sploott Road	1	1	4	6
Singleton Road	1	..	..	..	3	5	9
Swansea Street and Terrace	1	1	1	3
Tenby Street	2	..	..	..	..	..	2
Walker Road	1	..	1	1	3
Wimborne Street	5	5
Wilson Street	1	..	1
Total	2	..	8	12	..	12	15	44	148	241

BOROUGH HOSPITALS FOR INFECTIOUS DISEASES.

At the present time the hospital accommodation in the Borough for cases of infectious disease consists at the Cardiff Sanatorium of two large pavilions and an isolation block, which, allowing 2,000 cubic feet of space for each patient, gives 22 beds for each pavilion and 6 for the isolation wards.

From the appended Report it will be seen that owing to lack of accommodation a larger number of patients have from time to time been received into the wards than was originally intended. Small cots have been placed in the various wards, bringing up the total accommodation to 72 beds. In addition to the Sanatorium, the Sanitary Authority has a Small Pox Hospital containing three wards with accommodation for 50 patients.

During the past year the extension of the Cardiff Sanatorium has been in progress, and it is expected that the new wards now in process of construction will be complete and ready for use in the early part of next year. The extension consists of three new pavilions, which will bring up the total accommodation to 116 beds, exclusive of the 50 in the Small Pox Hospital.

The plans and drawings attached herewith and prepared by Mr. W. Harpur, M. Inst. C.E., Borough Engineer and Architect, show the distribution of the wards and other buildings of the Sanatorium on the site.

The total cost of the hospitals, exclusive of site, furniture, fittings, &c., is roughly as follows :—

SANATORIUM—

				£	s.	d.	£	s.	d.
Permanent Buildings	...	...	...	32,903	4	7			
Extension to Buildings	...	...	...	19,436	7	3			
							52,339	11	10

SMALL POX HOSPITAL—

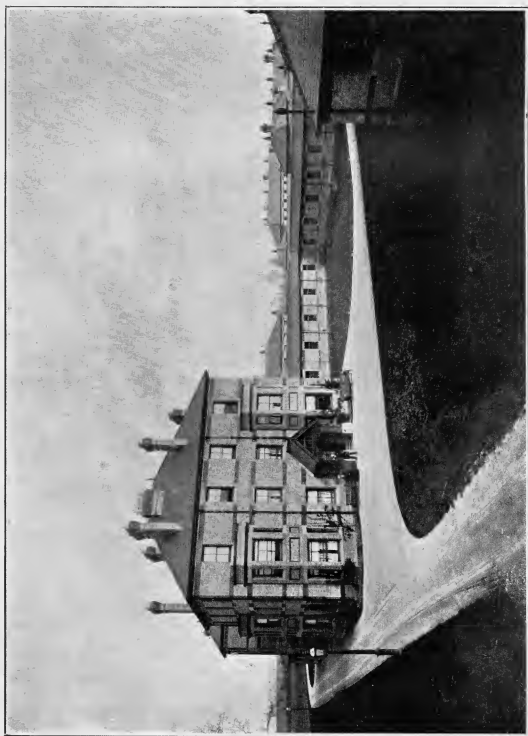
Temporary Buildings	...	...	...	1,884	4	2			
Additions to Buildings	...	...	...	575	1	1			
							2,459	5	3
Oak Fencing	...	...	...				577	11	1
Total	...	...	...				£55,376	8	2

The following is the Report for the year of the Resident Medical Superintendent,
Dr. B. W. Broad:—

REPORT FOR THE YEAR 1899.	MALES.		FEMALES.		TOTALS.
	Under 5 years.	Over 5 years.	Under 5 years.	Over 5 years.	
I.—Remaining in Hospital on 31st December, 1898:—					
Scarlet Fever	4	3	1	8	16
Typhoid Fever	2	2	..	2	6
Diphtheria	2	21	9	15	47
Total	8	26	10	25	69
II.—Admitted during the year ending 31st December, 1899:—					
Scarlet Fever	22	52	19	48	141
Typhoid Fever .. .. .	..	37	..	17	54
Diphtheria	46	95	44	118	303
Measles .. .. .	..	2	..	..	2
Total	68	186	63	183	500
Total under treatment in 1899	76	212	73	208	569
III.—Of the above there were Discharged					
(a) Recovered:—					
Scarlet Fever	22	46	16	41	125
Typhoid Fever	2	26	..	13	41
Diphtheria	33	96	40	113	282
Measles .. .. .	..	2	..	..	2
Total	57	170	56	167	450
(b) Died:—					
Scarlet Fever	2	1	..	1	4
Typhoid Fever .. .. .	..	7	..	2	9
Diphtheria	5	4	6	6	21
Measles .. .. .	..	..	..	..	..
Total	7	12	6	9	34
IV.—Remaining in Hospital on 31st Decem- ber, 1899:—					
Scarlet Fever	2	8	4	14	28
Typhoid Fever .. .. .	..	6	..	4	10
Diphtheria	10	16	7	14	47
Total	12	30	11	32	85
Total under treatment in 1899	76	212	73	208	569

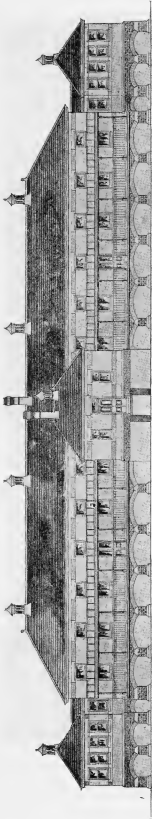
Mortality per cent. of cases under treatment:—

Scarlet Fever	2.5
Typhoid Fever	15%
Diphtheria	6%

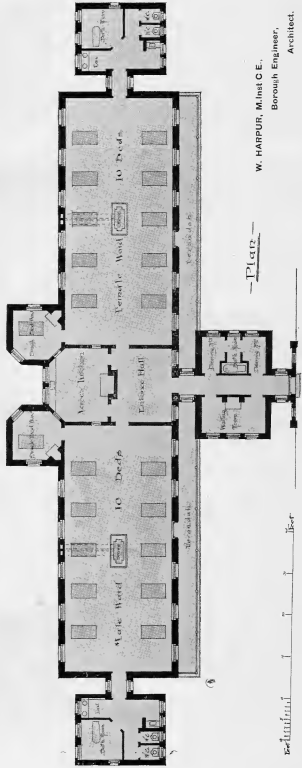


ADMINISTRATIVE DEPARTMENT.

— CARDIFF SANATORIUM —



— Elevation —



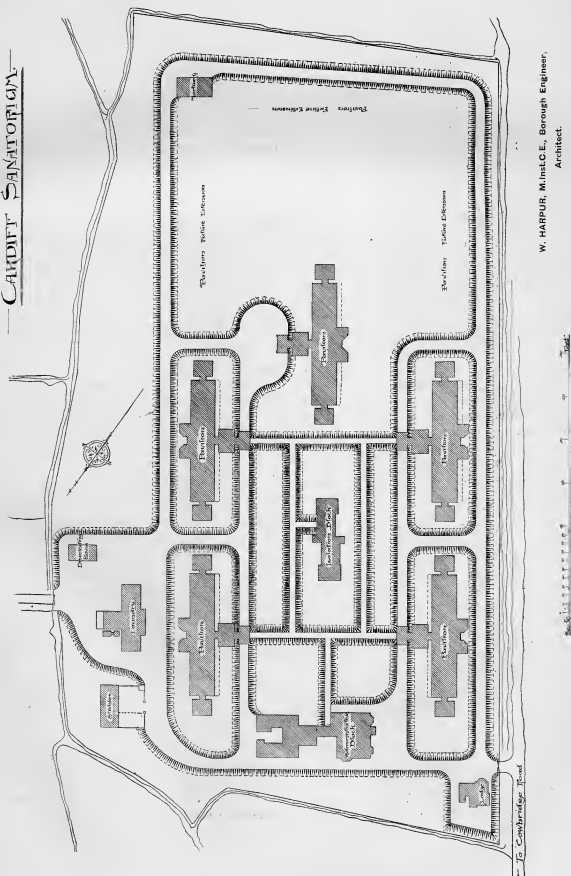
— Plan —

W. HARPUR, M.Inst.C.E.,
Borough Engineer,
Architect.

Cardiff

Carriage Way

CARDIFF SANATORIUM.



W. HARPUR, M.Inst.C.E., Borough Engineer,
Architect.

DAIRIES, COWSHEDS, AND MILKSHOPS.—On February 10th, 1899, a new Order was issued by the Local Government Board entitled “The Dairies, Cowsheds, and Milkshops Order of 1899.” The object of the Order was to give greater protection against the Tubercular infection of Milk, it provides that “Article 15 of the Order of 1885 shall be altered so that for the purposes of the provisions of paragraphs (a) and (b) thereof the expressions in the said Article which refer to disease shall include in the case of a cow such disease of the udder as shall be certified by a Veterinary Surgeon to be Tubercular; and the Order and Amending Order shall apply and be construed with the modifications necessary to give effect to this Article.”

Before the new Order came into force the term “disease” in Article 15 applied only to such diseases as came under the operation of the Diseases of Animals Act, 1894, and included Cattle-Plague, Pleuro-Pneumonia, Foot-and-Mouth Disease, and Anthrax. To these is now added Tubercular Disease of the Cow’s Udder.

The reason of this limitation of tubercular disease to the udder is that up to the present the tubercle bacillus is found only in milk when the disease exists in this gland.

The result of the Order of 1899 will be therefore as follows:—

Article 15 (Order 1885).—If at any time disease (including tubercular disease of the cow’s udder) exists among the cattle, in a dairy or cowshed, the milk of a diseased cow therein:

- (a) Shall not be mixed with other milk, and
- (b) Shall not be sold or used for human food, and
- (c) Shall not be sold or used for food for swine or other animals unless and until it has been boiled.

During the year a new set of Regulations under the Dairies, Cowsheds, and Milkshops Order, 1885, were prepared by the Medical Officer of Health and submitted to the Health Committee and subsequently to the Local Government Board.

These Regulations came into force on and after the 4th December, 1899. They give increased power to the Sanitary Authority in the matter of the sanitation of dairies, cowsheds, and milkshops, particularly in the details of paving and drainage. Impervious floors are now required by law in the case of all dairies and cowsheds, as without this it would be impossible to comply with the Regulation, which requires that “Every cowkeeper shall cause the drainage of every cowshed or dairy in his occupation to be so arranged that all liquid matter which may fall or be cast upon the floor may be conveyed by a suitable open channel to a drain inlet situate in the open air at a proper distance from any door or window of such cowshed or dairy or to some other suitable place of disposal which is so situate, and he shall not cause or suffer any inlet to any drain of such cowshed or dairy to be within such dairy or cowshed.

Further, a very desirable provision is made to the effect that the Cowkeeper “Shall not cause or suffer any cow belonging to him or under his care or control to be milked:—

- (a) Unless, at the time of milking, the udder and teats of such cow are thoroughly clean, and
- (b) Unless the hands of the person milking such cow, also, are thoroughly clean and free from all infection and contamination.

The attention of Dairymen and Cowkeepers has been called by circular to the revised Order and Regulations and to the necessity of ascertaining the presence of Tuberculosis amongst their cattle.

They have been advised that they can have the Tuberculin Test applied to any of their cows free of cost by the Veterinary Surgeon to the Corporation, on written application to the Medical Officer of Health.

PUBLIC HEALTH LABORATORY.—Amongst the recommendations which your Medical Officer of Health made in connection with preventive measures against the spread of Tuberculosis was “the establishment of a Public Health Laboratory in conjunction with other public bodies for the bacteriological diagnosis of the disease.” I have now the satisfaction of reporting that this recommendation was acted upon, and that in June last a Joint Committee was appointed, consisting of members of the Health Committee of the Cardiff Corporation and of the Sanitary Committee of the Glamorgan County Council, together with representatives of the Technical Instruction Committees of the Corporation and of the County Council, to undertake the management of the Laboratory, the establishment and maintenance of which had been previously decided upon. The Joint Committee resolved that the Laboratory be styled “The Cardiff and County Public Health Laboratory,” and that the direction and management thereof be in the hands of the Medical Officers for the County and Borough respectively.

In December the Committee appointed as bacteriologist W. G. Savage, M.D., B.Sc. Lond., to commence duties in January, 1900. Subsequently, at the invitation of the Committee, the Council of the University College of South Wales and Monmouthshire appointed Professors C. M. Thompson and F. A. Dixon its representatives to act with the Joint Committee in a consultative capacity, and it was arranged that the Laboratory should be utilized for the instruction of students and for medical practitioners in the Public Health Department of the Medical Faculty of the College.

The Laboratory was therefore fully established and equipped towards the end of the year 1899, and the work was commenced in the following January.

The Committee resolved that work on behalf of the Health Departments of the Cardiff Corporation and of the County of Glamorgan should be done free of charge, and that pathological specimens, which may be sent direct to the Laboratory by Medical practitioners in the County and Borough, should be charged for, on a scale of fees fixed by the Committee. It is expected that the Laboratory will be of great value to the Authorities which have joined in establishing it, and to the Medical Officers of Health, in carrying out scientific enquiries, connected with the public health of their districts.

The work to be carried out at the Laboratory will be primarily on behalf of the Public Health Departments of the Sanitary Authorities, and will comprise those branches of preventive medicine which require the aid of chemical and bacteriological analysis and methods. Investigations of this kind are often necessary, in order to determine the nature of the disease, and the duration of infection in any particular case, and more particularly in cases of Diphtheria, Tuberculosis, Cholera and Typhoid Fever, as well as in other diseases communicable from animals to man. The examination of various foods, particularly milk, and of air, water and sewage effluents could be undertaken. The prompt determination of the nature of cases of suspected infectious disease, by bacteriological examination, will prove of great service, both to the Sanitary Authority and to Medical practitioners attending such cases.

MEAT INSPECTION.—During the year, the following supplementary Report of the Medical Officer of Health on Meat Inspection was submitted to the Health Committee:—

“In a report submitted to you in 1896, amongst the conditions mentioned as necessary for “securing an efficient system of meat inspection were (1) the establishment of Public Abattoirs; (2) “the abolition of private slaughter houses; and (3) the appointment of properly qualified Meat “Inspectors.

"Having already secured two of these conditions, your Committee decided to recommend to the Council the appointment of a Veterinary Surgeon as Meat Inspector, and the selection of Mr. Moir to this office was subsequently confirmed. This appointment has proved a most useful addition to the staff of the Medical Officer of Health.

"The veterinary knowledge and experience of Mr. Moir are of extreme value in the detection of diseased conditions of animals and carcasses.

„At the present time, therefore, the inspection of meat at the Public Abattoirs is, in my opinion, efficiently performed. Your Committee has, however, desired me to report as to the possibility of extending the system to the inspection of all meat brought into the district from abroad, or from any locality outside the Borough.

"A large quantity of this meat is, on arrival at the port or railway station, immediately taken to the Ice Stores, and from thence distributed to the various butchers in the town, a certain quantity is slaughtered in the districts immediately outside the Borough, and delivered to the retail dealers in the town.

"With regard to foreign meat, it must be acknowledged that the methods of meat inspection abroad are far in advance of anything attempted in England. Cattle and meat are carefully inspected before exportation; moreover, all foreign animals, landed at English ports, are slaughtered under the supervision of the Inspector of the Board of Agriculture, and the Sanitary Authority has no control or responsibility in the matter.

"Fortunately, the danger of transmitting disease through the medium of meat is not great, and the tendency to exaggerate this danger is much to be deprecated. This admission affords no argument against meat inspection, the inspection should be as extended and as thorough as possible. The weak point in the present system is the method of inspecting the carcasses of animals slaughtered in the districts immediately outside the Borough and brought into this town for sale. It is only right to mention, however, that this meat is generally most excellent in quality. The extreme difficulty of carrying out any inspection of meat in rural districts in which there are a large number of private slaughter houses is sufficiently obvious. The difficulties of inspecting such meat after it has been distributed to the various butchers in the town are, if anything, still greater, owing to the large number of persons carrying on this business, and to the fact that, in some cases, the sole evidence of disease lies in the internal organs and viscera which are not brought in with the meat.

"These difficulties are, to some extent, overcome in some Continental cities by the establishment of meat stations for the examination of all carcasses slaughtered outside the town. These stations are placed in the several quarters of the town near the chief routes by which the meat arrives.

"In Berlin the service of meat inspection at the Abattoirs and in the different meat stations in the town comprise 40 Veterinary Surgeons, 23 for the Abattoir and 17 for the stations, besides microscopists and others employed in the Public Health Laboratory.

"You have at present no power to establish meat stations or to compel dealers to bring their meat to any central dépôt for examination.

"It is possible that you might obtain indirect power by adopting a system of licensing all butchers and purveyors of meat, who would then be subject to any Bye-Laws which you might make, and I would suggest that it might be desirable for your Medical Officer of Health to confer with Sir Richard Thorne, the Chief Medical Officer of the Local Government Board, with a view of

“ascertaining whether the Board would sanction the adoption of Bye-Laws framed so as to give
 “extended powers in the direction indicated. In the meantime it is quite possible to improve and
 “extend the present system of meat inspection.

“The inspection of the Central Market in St. Mary Street is carried out at present by the
 “Medical Officer of Health and Inspector of Nuisances, who visit it systematically and at various
 “times. Under this system it is of course possible that some meat may be sold without having been
 “inspected, but a considerable proportion of the meat sold here has already been inspected at the
 “Public Abattoirs. It would, however, be very desirable for your Committee to come to some
 “arrangement with the Property and Markets Committee with a view of giving instructions to the
 “Superintendent of the Market to send notice to the Medical Officer of Health’s Office of any meat
 “exposed for sale which, in his opinion, was unsound or of inferior quality.

“The inspection of butchers’ shops and provision stores could with advantage be carried out
 “to a greater extent and with very slight administrative changes in the Health Department. The
 “inspection of meat forms part of a general scheme for the prevention of Tuberculosis, and in the
 “report which I have submitted to you upon this subject reference is made to the establishment of a
 “Public Health Laboratory in which Microscopical and Bacteriological investigations could be carried
 “out in connection with an improved system of meat inspection. When the whole subject of the
 “prevention of Tuberculosis comes before your Committee you will doubtless give this part of it due
 “consideration.”

NEW BUILDING BYE-LAWS.—In reference to the new Bye-Laws, which have been
 under consideration during the year, and which have now received the sanction of the Local
 Government Board, the Medical Officer of Health was requested to report to the Board upon certain
 points connected with the nature of the soil in parts of the Borough where building is likely to take
 place.

The following is a copy of the report, dated Nov. 20th, 1899 :—

“At a meeting of the Health and Port Sanitary Committee of the Council of the County
 “Borough of Cardiff, held on the 25th October, 1899, it was resolved “That the Medical Officer of
 “Health be desired to report to the Local Government Board (as desired by the Board) on the nature
 “of the soil in parts of the Borough where building is likely to take place, *re* clause 10 of the pro-
 “posed Building Bye-Laws, and that a copy of such report be afterwards laid before this Committee.”

“On referring to the letter of the Local Government Board, dated 18th October, 1899, a
 “copy of which has been forwarded to me by the Town Clerk, I find that the Board desires this
 “information in reference to the question of the need, for purposes of health, of covering the surface
 “of the ground under houses with a layer of impermeable material, in accordance with the provisions
 “of clause 10 of the New Building Bye-Laws.

“In accordance, therefore, with the terms of the above resolution, I beg to report as
 follows :—

“Having regard to the position of Cardiff, lying as it does at the mouths of three rivers, the
 “Rhymney, Taff and Ely, and to the nature of the soil within the borough, I am of opinion that there
 “are very few parts of the town to which either clause 10 or clause 11 of the new Building Bye-
 “Laws should not apply. Nearly the whole of the Urban Sanitary District is situated on a low-lying,
 “alluvial plain, consisting, in varying proportions, of mud, sand and gravel, extending from Penarth
 “Dock and the river Ely on the Western Boundary, to the river Rhymney on the Eastern Boundary.
 “The ground upon which the town is built is flat, and for the most part not many feet above the sea
 “level, but rising gradually in the northern and inland districts to the foot of the range of hills

“forming the Southern edge of the South Wales coalfield. The general surface of the plain is about two feet below spring-tide level. The centre of the town, near the Town Hall, is 36 feet above Ordnance datum. The soil of the northern and more inland portion of the town is gravel, or a mixture of gravel and sand, and is of a very pervious character. In the Southern or lower part of the town the gravel is overlapped by an alluvial deposit of stiff and impervious clay, about 30 feet deep on the shore line, and becoming thinner, until it disappears towards the centre of the town.

“Below the gravel is a great variety of geological formations. Towards the Roath Park and Penylan Hill, Ludlow and Wenlock beds of the Silurian formation are exposed. In sections in Roath Park, and near the Barracks, pebbles and boulders of the glacial drift are seen, having their origin in the old red sandstone and other beds, which crop up a few miles to the north. Red marls and sandstones underlie the gravel in many parts of the town. The most elevated and driest districts within the Borough boundaries is between Roath Park and Penylan, where the Silurian beds come to the surface, and this is the only district, in my opinion, in which the application of Clause No. 10 might be unnecessary, provided always that the provisions of Clause 18, and of the other Clauses relating to the protection of buildings against damp, are carried out.

“Mr. W. Harpur, M.I.C.E., the Borough Engineer, of Cardiff, with whom I have had the advantage of conferring upon the subject of this report, informs me that this is one of the districts in which building is likely to take place some years hence, but not immediately.

“Building operations are also likely to be carried out on the low-lying clay lands on the East and West Moors, and also towards the North, near the Cemetery and Barracks.

“These districts are either on impervious marine clay at a very low level, or in the north on a mixture of gravel, sand and clay of a more pervious character.

“According to Ordnance datum the levels of these districts are as follows :—East Moors, about 25 feet; West Moors, about 21 feet; Penylan Hill, from 36 to 210 feet; Barracks, about 93 feet.

“With reference to the low-lying lands it is to be observed that, in accordance with clause 11 of the draft of the new Bye-laws, there is an alternative arrangement whereby it is provided that unless the building is erected upon cement, concrete, masonry or brickwork the site shall be elevated by the deposit of suitable material to a height at least 25 feet above Ordnance datum, or that the floor of the lowest storey shall be at least 25 feet above Ordnance datum. In my opinion the elevation of the site itself is the arrangement most likely to be beneficial.

“The dangers to health of residence on a damp subsoil are well known, hence the desirability of making regulations to prevent the passage of dampness from the soil into the interior of dwellings. Such regulations as those contained in clause 10 are not only applicable to low-lying clay soils, but also to gravel and other pervious soils, which frequently contain a large volume of ground water which at times rises to a high level near the surface.

“Moreover, the use of concrete, etc., as prescribed by clause 10, is desirable for the purpose of preventing the entrance into the house of ground air, very frequently a source of considerable danger. It is therefore obvious, from the nature of the soil and the position of the land in which building is likely to be carried out, that there are very few sites in the borough in which either clause 10 or clause 11 of the Bye-Laws should not apply.”

SANITARY CONDITION OF THE DISTRICT AND SUMMARY OF WORK

PERFORMED BY THE OFFICERS OF THE
MEDICAL OFFICER OF HEALTH'S DEPARTMENT.

The systematic house to house inspection of the district which was commenced in January, 1891, was continued throughout the year. The following tables show the nature of the work carried out by the various Inspectors, acting under the supervision of Mr. D. Vaughan, Chief Inspector of Nuisances, and I cannot speak too highly of the efficient manner in which he and his assistants have performed their difficult duties.

The erection of new houses, together with the construction of their drainage, is entirely under the control of the Borough Engineer and of the officers of his Department, who are ever ready to render any advice or assistance to your Health Department.

For the purposes of inspection, the Borough is divided into five districts as follows :—

				Estimated Population.	Name of District Inspector.
District No. 1 comprising	Canton Ward	} containing an area	of 762 acres	40,475	T. W. WARREN, Certifi. San. Inst.
	Riverside Ward				
„ No. 2 „	Adamsdown Ward	} containing an area	of 3,024 acres	30,688	W. FISHER, Certifi. San. Inst.
	Splott Ward				
„ No. 3 „	Roath Ward	} containing an area	of 1,299 acres	40,664	F. GLOVER, Certifi. San. Inst.
	Park Ward				
„ No. 4 „	Central Ward	} containing an area	of 842 acres.	32,242	S. EVANS, Certifi. San. Inst.
	Cathays Ward				
„ No. 5 „	South Ward	} containing an area	of 2,424 acres.	31,977	J. W. HOLDEN, Certifi. San. Inst.
	Grangetown Ward				

In addition to the District Inspectors there are also others as follows :—Two Inspectors for Infectious Diseases, one for Lodging Houses, one Inspector of Dairies, Cowsheds, and Milkshops (who also acts as Inspector under the Sale of Food and Drugs Act), one Inspector of Workshops, and one Inspector of Meat, who is a Veterinary Surgeon. Besides the above there are two Disinfectors.

The general sanitary inspection of the district is carried out in a systematic manner by five District Inspectors supervised by the Chief Inspector of Nuisances; in this way nuisances which may arise from time to time are promptly abated. During the past year about 4,000 nuisances were thus dealt with. The work of the Special Inspectors is also well carried out, and has an important effect upon the health of the community, by this means workshops and factories are kept in a good sanitary condition. The common and seamen's lodging houses are all registered and dealt with under special bye-laws. Cowsheds, milkshops, and dairies are regularly inspected, and new and comprehensive regulations have been made under the Dairies Cowsheds, and Milkshops Order of 1899. Special attention is paid to the inspection of meat and food in the district. All animals slaughtered in the Borough are inspected by the Corporation Meat Inspector, who is a veterinary surgeon. This has been rendered possible by the abolition of all private slaughter-houses within the Borough.

There are in Cardiff no large insanitary areas which could be dealt with under Part I. of the Housing of the Working Classes Act, 1890, but a considerable amount of property has been dealt with under Part II. of the Act, and closing orders have been obtained against the owners of a large number of houses which were for many reasons unfit for habitation; amongst others may be mentioned all the houses in Mill Lane Court, 34 houses in Stanley Street, and 12 houses in the Leekwith Road. Masons' Arms Court and the following courts have been entirely abolished :—Kettle Court, Evans' Court, Union Buildings, Landore Court, Dalton Court, Gainor's Court, Rising Sun Court, Jones' Court (Womanby Street), The Tunnel (Queen's Street), and Temperance Terrace (Working Street).

HOUSE INSPECTION FOR THE YEAR, 1899.

CENTRAL WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Seulery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Wood Street	67	13	2	6	15	1	64	..	58	51	1	34
Havelock Street	44	7	5	..	9	1	37	..	37	37	3	17
Raven Street	17	1	..	2	3	..	16	..	16	16	..	4
Eisteddfod Street	40	..	2	..	6	..	40	..	40	40	..	16
Frederick Street	65	8	1	1	9	..	60	..	53	43	8	14
Little Frederick Street	35	1	..	1	..	..	32	..	32	30	..	3
Stanley Street	5	..	1	..	..	..	5	..	5	5	..	2
Gough Street	33	4	4	3	4	..	33	..	33	25	..	10
Mary Ann Street	44	3	4	..	..	..	40	..	40	27	..	9
Plymouth Street	7	..	..	..	..	..	7	..	7	2	..	..
Hill's Terrace	61	10	1	2	9	1	44	..	44	41	8	2
Scott Street	57	10	5	3	16	..	57	..	57	57	..	24
Love Lane	40	2	1	..	1	..	40	..	40	40	..	6
Canal Street	28	3	..	1	5	..	23	1	22	22	..	10
Park Street	31	9	1	..	9	..	31	..	26	20	20	1
David Street	29	..	1	1	..	..	28	..	28	26	..	2
Hill's Street	9	..	..	..	2	..	4	..	4	2	..	2
Cross Street	2	2	..	..	2	..	2	..	2	2	..	..
Matthews' Court	6	..	..	..	..	..	3	..	3	3	..	1
Evans' Court	2	..	..	..	..	..	1	..	1	1	..	..
Gallivers' Court	2	..	..	..	..	..	1	..	1	1	..	1
Giles' Court	4	..	..	..	..	..	4	..	4	4	..	..
Roberts' Court	7	..	..	..	..	..	4	..	..	..	..	..
Davis' Court	3	..	1	..	..	..	2	..	2	2	..	..
Peters' Court	2	..	..	..	..	..	2	..	2	2	..	..
Castle Court	5	..	..	..	..	..	2	..	2	2	5	..
Jenkins' Court	6	..	2	2	..	..	3	..	3	3	..	..
Williams' Court	2	..	..	..	..	..	..	..	..	..	..	..
French Cottages	4	1	1	..	..	..	2	..	2	2	..	1

SOUTH WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Seulery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Maria Street	35	..	1	2	2	..	26	..	25	23	..	10
Peel Street	26	..	1	2	2	..	21	..	21	21	..	9
Bute Road	26	3	..	4	2	..	30	..	..	5	..	13

CATHAYS WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Sewery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Llantwit Street ..	22	8	..	1	10	..	18	..	14	8	..	..
Llanbleddian Gardens ..	33	4	..	1	2	..	56	..	27	21	..	7
Ruthin Gardens ..	30	..	..	5	2	..	47	..	47	43	..	..
Llandough Street ..	28	5	..	6	6	..	28	..	28	20	1	..
Cogan Terrace ..	14	4	..	6	6	..	25	8	13	10	..	..
Miskin Street ..	43	..	..	..	9	..	63	..	37	32	..	..
Senghenydd Road ..	24	1	..	3	3	..	41	1	11	9	..	3
Glyrhondda Street ..	32	..	..	2	..	..	62	..	30	17	..	..

PARK WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Sewery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Arran Street ..	136	9	..	7	..	..	138	..	136	92	14	10
Glenroy Street ..	101	7	11	6	..	..	101	..	101	76	8	39
Rose Street ..	47	6	1	5	1	..	47	..	47	47	8	..
Milton Street ..	66	9	3	4	6	..	67	..	67	65	11	18
Lily Street ..	30	5	..	4	3	..	30	..	30	30	2	..
Shakespeare Street ..	8	1	..	1	..	..	8	..	8	8	..	3
Plasnewydd Road ..	42	6	1	7	3	..	42	..	42	42	10	..
Treharris Street ..	127	..	..	7	..	..	127	..	127	121	35	..

ADAMSDOWN WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Sewery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Silver Street ..	19	..	..	..	1	..	19	..	19	19	..	3
Lead Street ..	26	2	..	..	..	..	26	..	26	26	..	6
Copper Street ..	17	..	1	..	2	..	17	..	17	17	..	10
Moon Street ..	24	..	..	..	2	..	24	..	24	24	..	4
Sun Street ..	7	..	..	..	..	..	7	..	7	7	..	7
Noah Street ..	7	..	..	..	..	..	7	..	7	3	..	..
Tyndall Street ..	51	..	..	..	2	..	53	..	53	43	..	23
South Terrace ..	6	..	..	..	..	..	6	..	6	6	..	..
Duffryn Street ..	10	..	..	..	..	..	10	..	10	10	..	4
Garth Street ..	20	..	..	..	..	..	20	..	20	20	..	5
Iron Street ..	27	1	..	..	..	..	27	..	27	27	..	15
Gold Street ..	15	..	..	..	1	..	25	..	15	10	..	1
Sandon Place ..	34	..	..	..	..	..	34	..	34	34	..	8
Pellet Street ..	24	..	1	..	..	..	23	..	23	23	..	4
Ellen Street ..	35	..	1	..	..	..	35	..	35	35	..	7
Eclipse Street ..	46	..	..	..	3	..	46	..	46	46	..	..
Comet Street ..	45	1	..	..	2	..	44	..	44	44	..	9
Planet Street ..	47	1	..	..	2	1	46	..	46	46	1	19
Adam Street ..	6	..	..	..	2	1	31	..	29	12	..	17
Thomas Court ..	2	..	..	..	..	..	2	..	2	2	..	..
Dews Court ..	9	..	..	..	..	..	9	..	9	9	..	8

RIVERSIDE WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Scullery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
King's Road	72	10	..	24	26	..	120	..	72	34	..	..
Halket Street	92	10	4	7	13	..	92	..	92	88	..	42
North Morgan Street	25	7	..	3	11	..	25	..	25	25	..	..
South Morgan Street	30	12	2	17	14	..	30	..	30	30	5	..

CANTON WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Scullery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Springfield Place	52	7	3	12	7	..	45	..	45	45	14	17
Conybeare Road	38	5	..	5	10	..	39	..	38	38	1	10
Wellington Street	147	22	..	55	72	..	147	..	147	143	26	33
Stag Terrace	13	10	..	13	8	..	13	..	13	13	13	8
Glynn Street	69	14	2	18	38	..	69	..	69	..	..	..

ROATH WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Scullery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Helen Street	80	3	7	2	..	..	80	..	80	80	7	6
Nora Street	148	5	1	7	6	1	148	..	147	145	23	1

GRANGETOWN WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Sewery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Clare Road ..	151	7	3	16	4	..	147	..	133	71	11	41
Wedmore Road ..	59	2	..	12	2	..	31	..	23	23	8	10
Cornwall Road ..	51	2	..	2	..	..	50	..	57	55	29	55
Stoughton Street ..	42	..	..	..	..	..	42	..	42	42	..	8
Dorset Street ..	25	..	2	4	..	..	25	..	25	22	..	11
Lacknow Street ..	4	..	..	..	..	..	4	..	4	4	..	..
Bishop Street ..	18	..	..	1	..	..	18	..	18	18	..	13
Monmouth Street ..	30	..	..	4	..	..	30	..	30	26	11	23

SPLOTT WARD.

NAME OF STREET.	Number of Houses Inspected.	Defective Drains.	Choked Drains.	Defective W.C.	Defective Traps.	Sewery Sinks connected direct with Drain.	Number of Water Closets.	Inside Closets not ventilated.	Outside Water Closets not ventilated.	Outside Closets not supplied with Water.	Dampness of Premises.	Other Nuisances.
Menelaus Street ..	28	..	..	..	..	..	28	..	28	..	..	..
Cornelia Street ..	41	..	1	1	..	..	41	..	41	..	6	27
Elaine Street ..	12	..	..	..	..	..	11	..	11	..	..	8
Enid Street ..	28	..	1	..	..	..	28	..	28	..	..	16
Bridgend Street ..	52	..	..	..	..	..	46	..	46	21	..	46
Layard Street ..	56	..	..	1	..	..	56	..	56	..	..	12
Portmanmoor Road ..	30	..	..	..	..	..	30	..	30	..	..	15
Swansea Street ..	25	..	..	..	..	..	25	..	25	..	..	12
Carlisle Street ..	209	1	3	3	1	..	204	..	198	92	..	72
Llanelly Street ..	14	..	1	..	..	..	14	..	14	14	..	10
Caeiphilly Street ..	36	..	..	..	..	..	36	..	36	36	13	25

INSPECTION OF FACTORIES AND WORKSHOPS.

UNDER THE FACTORY AND WORKSHOP ACTS, 1878—95, AND THE SHOP HOURS ACT, 1892.

During the year a large number of workshops have been inspected. The results of these inspections are given in the annexed Tables :—

Nature of Workshop.	No. on Register.	No. of Inspections.
Tailors ...	125	410
Dressmakers ...	151	367
Milliners ...	40	93
Bakers ...	141	421
Bootmakers ...	52	130
Laundries ...	10	19
Wheelwrights and Blacksmiths	7	25
Sugar Boilers ...	5	13
Coach and Wagon Builders...	8	23
Cabinet Makers and Upholsterers	21	39
Carpenters and Joiners ...	13	56

INSPECTION OF FACTORIES AND WORKSHOPS—*Continued.*

Nature of Workshop.	No. on Register.			Number of Inspections.
Bedding Makers ...	2	...	...	4
Picture Frame Makers ...	4	...	...	33
Saddlers ...	12	...	...	20
Plumbers ...	14	...	...	19
Printers and Bookbinders ...	5	...	...	17
Engravers ...	3	...	...	7
Umbrella Makers ...	2	...	...	6
Cycle Manufacturers ...	9	...	...	27
File Works ...	1	...	...	1
Blind Makers ...	3	...	...	4
Pipe Makers ...	1	...	...	1
Tin Smiths ...	5	...	...	7
Bottlers ...	16	...	...	31
Aerated Water Manufacturers	2	...	...	3
Chemists' Packers ...	6	...	...	25
Tobacco Manufacturers ...	3	...	...	4
Hair Workers ...	2	...	...	2
Brass Workers...	1	...	...	2
Jewellers ...	4	...	...	12
Scale Makers ...	1	...	...	2
Packers ...	4	...	...	2
Wire Workers...	1	...	...	1
Domestic Machines Manufacturers	3	...	...	5
Pianoforte and Organ „	4	...	...	5
Truss and Limb Maker ...	1	...	...	1
Waterproof Manufacturers...	3	...	...	3
Plaster Moulder ...	2	...	...	3
Basket Maker ...	1	...	...	7
Furrier ...	1	...	...	4
Blue Factory ...	1	...	...	5
Jam Works ...	2	...	...	1
Foundry ...	4	...	...	10
Engineers ...	9	...	...	14
Electricians ...	3	...	...	3
Box Makers ...	3	...	...	3
Shirt and Hose Manufacturers	2	...	...	4
Tar Distillers ...	2	...	...	3
Paper Bag Makers ...	3	...	...	9
	<u>718</u>			<u>1,906</u>

Notices of New Workshops from Inspector of Factories under Factory Act, 1891, Sec. 26, Sub. 2 Factory Act, 1895, Sec. 41	...	...	39
Notices from Inspector of Factories <i>vs</i> Sanitary Defects in Workshops, Sec. 4 Factory and Workshop Act, 1878	...	...	1
Notices sent by Sanitary Authority to Inspector of Factories under Sec. 3 Factory and Workshop Act, 1891	...	...	95
Notices sent by Sanitary Authority to Inspector of Factories <i>vs</i> over- working	...	...	1

WORKSHOPS.

	Bakers.	Tailors.	Dress Makers.	Milliners.	Carpenters and Joiners.	Cycle Makers.	Bottlers.	Chemists' Packers.	Manufactory.	Paper Bag Makers.	Cabinet Makers.	Picture Frame Makers.	Printers.	Boot Makers.	Sugar Boilers.	Plumbers.	Blue Factory.	Wagon Builders.	Blacksmiths.	Tinsmiths.	Engineers.	Foundry.	Tar Distillers.	Basket Makers.	Hose Manufacturers.	Purifiers.	Domestic Machines Manufacturers
W.C. accommodation provided	2	..	..	1	1	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	1	..	..	1	..
Urinals provided	1	..	..	1	1	1	..	..	..	..
Flushing apparatus provided	1	3	4	3	..	..	..	..	..	1	..	..	1	1	2	1	3	..	..	..	..	..	..	..	..	..
Drains trapped and repaired	3	6	2	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Container-pan closets abolished	1	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Ventilation provided	1	5	..	..	..	..	..	..	1	2	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..	..
Linewashed	45	8	..	..	1	1	1	1	1	2	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Over-crowded	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Accumulations removed	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..
Plastering and paving repaired	1	5	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..
Roofs and shutles do.	1	2	2	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	2	..	..	..	..	..	..
Offensive closets cleansed and repaired	3	2	4	1	..	..	..	..	..	..	1	1	3	..	..	..	1	1	..	2	..	..	..	..	..	..
Manure pit provided	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
W.C. removed from workroom	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Workrooms damp and dirty	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	65	32	18	5	5	1	2	2	1	1	4	3	1	11	2	2	1	5	2	1	3	1	2	1	1	2	1

SHOP HOURS ACT, 1892-5.

NATURE OF SHOPS INSPECTED.	Number of Inspections.	Number of Shops in which young Persons are employed.	Infringement of Act.	Proceedings taken. RESULT.
Grocers and Tea Merchants ...	325	192	...	...
Drapers	111	76	1	Cautioned.
Butchers	201	102	...	...
Fancy and General Dealers ...	53	26	...	...
Outfitters	88	60	...	...
Hairdressers and Tobacconists ...	134	75	1	Dismissed.
Fruiters, Florists, and Fishmongers ...	156	84	...	...
Decorators	24	14	...	...
Furniture, Picture, and Music Dealers ...	51	33	...	...
Confectioners	126	47	...	...
Newsagents and Stationers...	107	80	1	Cautioned.
Jewellers and Opticians	41	23	...	...
Dyers' Receivers	10	9	...	...
Chemists	48	38	...	...
Public Houses... ..	115	36	...	...
Restaurants	53	23	...	...
Ironmongers	68	39	...	...
Cycle Dealers	16	11	...	...
Boot Dealers	88	64	...	...
Hatters and Hosiers	15	11	...	...
India Rubber Merchants	3	3	...	...
Leather Dealers	5	3	...	...
China Dealers	14	10	...	...
Umbrella Dealers	6	3	...	...
Naturalists	1	...	...	...
Corn and Seed Dealers	11	7	...	...
Total	1,870	1,069	3	...

INSPECTION OF COMMON LODGING HOUSES.—These houses are regulated by the provisions of the Public Health Act, 1875. Section 77 requires all Common Lodging Houses to be registered, and Section 80 empowers the Sanitary Authority to make Bye-laws.

- (1) For fixing and from time to time varying the number of lodgers who may be received into a Common Lodging House, and for the separation of the sexes therein.
- (2) For promoting cleanliness and ventilation in such houses.
- (3) For the giving of notices and the taking precautions in the case of any infectious diseases ; and
- (4) Generally for the well ordering of such houses.

In the year 1891, your authority adopted Bye-laws which correspond closely with the " Model Bye-laws " of the Local Government Board.

COMMON LODGING HOUSES.

Total number on register ... ..	...	...	...	32
Registered rooms ... ..	...	...	...	135
Number of persons certified to accommodate ..	..	.	...	450
Day inspections ... ..	...	...	...	590
Night „ ... ..	...	...	...	136
W.Cs. cleansed and repaired ... ..	...	...	...	85
„ supplied with water ... ..	...	...	...	11
Additional W.C. accommodation provided ... ..	...	...	...	—

COMMON LODGING HOUSES—*Continued.*

Drains trapped and repaired	...	...	...	29
Soil pipes ventilated	...	...	...	2
Special ventilation provided to rooms	...	...	...	22
Lime-washed	...	...	...	191
Overcrowded	...	...	...	2
Yards paved	...	...	...	24
Accumulations removed	...	...	...	71
Infectious disease discovered	...	...	...	—
Registered	...	...	...	1

SEAMEN'S LODGING HOUSES.

Total number of applications	...	...	...	291
" " persons licensed	...	...	...	106
" " houses, the occupiers of which have been licensed	...	...	...	108
Maximum number of lodgers authorised to be received in the above	...	...	...	1,111
Number of day inspections...	...	...	...	2,160
" night " ...	...	...	...	265
Number of houses in which sanitary improvements have been effected	...	...	...	130

NATURE OF SANITARY DEFECTS:—

Defective water-closets	...	...	...	88
Insufficient W.C. accommodation	...	...	...	3
Defective drains	...	...	...	86
Defective paving in yards	...	...	...	68
Defective bedroom ventilation	...	...	...	90
Stables without manure pits	...	...	...	—
Houses with walls and roofs out of repair	...	...	...	71
Infectious disease discovered	...	...	...	7
Limewashed	...	...	...	285

INSPECTION OF SLAUGHTER-HOUSES AND MARKETS.

Mr. Moir, M.R.C.V.S., your Inspector of Meat, reports to me that he has made daily inspections of the Public Abbatoirs at Roath and Canton.

The following is the result of his inspections:—

		Canton Abbatoir.	Roath Abbatoir.
Beasts slaughtered	...	541	6,426
Sheep	...	5,185	39,607
Calves	...	264	3,242
Pigs	...	3,704	26,409
		<u>9,694</u>	<u>75,684</u>

The following is the amount and description of food seized and dealt with under the 116-119 Sections of the Public Health Act:—

Beef, 8,214 lbs.	Mutton, 60 lbs.	Pork, 2,207 lbs.	Fruit, 3,150 lbs.
	Game, 250 lbs.	Veal, 324 lbs.	

The nature of the diseases in each case was as follows:—

Tuberculosis	...	...	11 Cows.
"	...	...	1 Pig.
Enteritis	...	...	4 Pigs.
Swine Fever	...	...	6 Pigs.
Injuries	...	...	4 Calves.
"	...	...	2 Sheep.
"	...	...	2 Pigs.
Abscess	...	...	1 Pig.

The nature of the diseases—Continued.

Blood Poison	...	...	2 Pigs.
Congestion of Lungs	...	...	1 Pig.
Stomatitis	...	...	1 Pig.
Inflammation of Stomach and Intestines	...	...	1 Pig.
Anæmia	...	...	1 Sheep.
Dropsy	...	...	1 Cow.
Intussusception	...	...	1 Pig.

SALE OF FOOD AND DRUGS ACT.

The following articles were analysed during the year by Mr. Thomas Hughes, F.I.C., F.C.S., Borough Analyst:—

Samples obtained.	Number of Samples.	Number of Genuine Samples.	Number of Samples Adulterated.	Fines.
Milk	381	376	5	Two dismissed; £5 5s. and costs; 20/- and costs; 10/- and costs.
Butter	67	61	6	£5 and costs; 5 dismissed.
Coffee	12	12	—	
Demarara Sugar	12	12	—	
Bread	18	18	—	
Cake	6	6	—	
Flour	30	30	—	
Cheese	6	6	—	
Pepper	12	12	—	
Sausage	12	12	—	
Bacon	6	6	—	
Tin Meats	6	6	—	
Tea	6	6	—	
Whisky	13	12	1	41/- and costs.
Rum	4	3	1	40/- and costs.
Brandy	2	2	—	
Gin	6	6	—	
For issuing a false warranty	—	—	—	£20 and costs or three months' imprisonment.
Total	599	586	13	

MAGISTERIAL PROCEEDINGS.

	No. of Cases.	Fines.		
		£	s.	d.
Proceedings under Sale of Food and Drugs Act ...	16	37	16	0
Proceedings under Seamen's Bye-Laws	9	20	0	0
Proceedings under Common Lodging Houses ...	...	...	...	...
Proceedings under Cowsheds and Milkshops Order	...	...	...	...
Proceedings under Houses of the Working Classes Act	...	...	...	...
Proceedings under Shop Hours Act	3	...	...	...
Proceedings under Factories and Workshops Act...	...	...	...	...
Proceedings under Public Health Act	2	...	...	...
	30	£57	16	0

In conclusion, I have the pleasure of reporting that your Inspectors of Nuisances have carried out their work in a satisfactory manner, and that they have, as usual, paid the greatest attention to their varied and important duties.

I have the honour to be, Gentlemen,

Your obedient servant,

EDWARD WALFORD, M.D.,

MEDICAL OFFICER OF HEALTH.

COWSHEDS, MILKSHOPS, AND DAIRIES.

PARTICULARS OF INSPECTION.					COWSHEDS.	MILKSHOPS.
Total number inspected	...	...	...	...	194	494
Found in good condition	...	...	...	...	194	471
Impure water supply	...	...	...	...	—	—
Water closets, sinks, or drains defective	...	...	...	...	—	9
Receptacles for manure erected	...	...	...	...	—	1
Yards badly paved and accumulations of rubbish	...	...	...	...	—	11
Dairies or milkshops used for purposes incompatible with proper preservation of milk	...	...	...	...	—	—
Infectious disease amongst persons employed	...	...	...	...	—	2
Cowsheds with defective lighting, cleansing, ventilation of air space, and lime washing	...	...	...	...	—	—
Cowshed overcrowded	...	...	...	...	—	—

CANAL BOATS.

Number of boats on register	...	...	...	...	36
„ inspections	...	...	...	...	88
„ boats found in good condition	...	...	...	...	24
„ „ „ with wrong register number	...	...	...	...	1
„ „ „ „ defective ventilation	...	...	...	...	6
„ „ „ „ change of masters	...	...	...	...	—
„ notices, verbal or otherwise, served and complied with	...	...	...	...	12
Water casks not properly provided	...	...	...	...	2
Floor of cabins defective	...	...	...	...	3
Certificates cancelled...	...	...	...	...	11

APPENDIX.

METEOROLOGICAL OBSERVATIONS FOR THE YEAR 1899.

MONTH.	Attached Thermometer.	Barometer. Inches.	TEMPERATURE IN SHADE.							HYGROMETER.			RAINFALL.				DEATH RATE. Per 1,000.	
			Maximum.	Minimum.	Mean of Maximum.	Mean of Minimum.	Mean of Month.	Earth.		Dry Bulb mean.	Wet Bulb mean.	Relative Humidity.	Amount in Inches.	Greatest Fall in 24 hours.	Date of Greatest Fall.	Days on which 0.01 or more rain fell.	All Causes.	Seven Chief Zymotic Diseases.
January	57	29.791	56.8	28.8	47.1	37.3	42.2	42.0	45.6	41.8	39.9	86	5.50	1.03	20th	20	13.4	0.9
February	57	29.579	59.8	21.2	46.9	35.7	41.3	41.6	43.8	40.9	38.9	84	3.89	0.79	4th	13	15.9	1.7
March	56	30.045	62.5	20.2	52.1	32.2	42.1	40.9	43.4	42.1	38.9	76	1.39	0.88	25th	6	17.6	1.4
April	53	29.823	59.5	29.8	53.7	40.7	47.2	48.8	32.3	48.0	45.0	79	4.34	0.92	20th	18	12.4	1.4
May	60	30.038	70.2	34.5	60.0	44.1	52.0	54.3	51.4	53.0	48.6	83	2.49	0.78	19th	12	13.1	1.1
June	68	30.054	83.5	38.0	71.4	48.3	59.8	61.8	57.3	63.3	58.0	70	1.17	0.45	30th	5	12.7	0.8
July	69	30.088	86.5	44.5	73.8	53.8	63.8	65.5	61.1	65.8	60.6	72	0.32	0.09	1st	6	13.3	1.5
August	72	30.096	87.8	46.8	82.2	54.4	68.3	67.1	64.0	66.3	69.0	71	1.74	0.56	29th	7	22.4	6.7
September	63	29.862	81.2	34.5	67.3	48.4	57.8	61.8	62.9	61.8	62.9	74	2.59	0.74	26th	13	18.9	4.6
October	59	30.002	67.8	28.8	61.2	36.2	48.9	52.7	56.3	49.0	47.7	83	2.34	0.60	27th	12	14.2	1.2
November	62	30.086	57.0	25.0	67.8	48.0	47.0	45.9	52.7	48.9	48.2	94	3.29	0.95	9th	11	15.8	0.9
December	51	29.697	56.0	15.0	44.3	30.4	37.3	31.9	47.1	37.3	36.1	89	3.69	0.86	28th	19	15.7	1.3

727.8 569.5
60.5 44.5
153.1

Mean Temperature of each Month in the Year, as compared with that of the previous Five Years.

MONTH.	1891	1892	1893	1894	1895	Mean of 5 years	1896	1897	1898	1899
January ..	35°8	36°2	36°8	39°4	35°5	36°3	41°6	35°9	44°0	42°2
February ..	41°6	38°6	42°2	43°0	29°3	38°9	40°8	43°5	41°3	41°3
March ..	40°8	35°9	47°1	44°4	41°6	41°9	45°9	44°6	41°1	42°1
April ..	45°5	43°2	53°0	47°0	47°9	47°3	48°0	46°3	46°6	47°2
May ..	50°9	50°7	57°3	49°7	54°4	52°6	52°9	49°1	49°9	52°0
June ..	60°2	54°5	62°4	57°1	58°5	58°5	61°4	59°5	55°9	59°8
July ..	60°2	64°1	63°6	60°3	60°0	61°6	61°4	62°7	60°6	63°8
August ..	56°4	61°3	64°8	57°5	59°0	59°8	58°6	60°9	61°5	68°3
September ..	57°0	56°0	57°1	53°2	59°7	56°6	56°8	54°4	58°8	57°8
October ..	48°8	42°9	51°0	50°3	46°7	47°9	46°2	51°2	52°7	48°9
November ..	41°7	43°8	43°2	47°2	47°2	44°6	39°9	46°1	45°7	47°0
December ..	40°4	35°8	42°1	41°8	40°0	40°0	40°0	42°5	46°7	37°3

The following Table illustrates the Daily Direction of Wind throughout the Year 1899.

Direction of Wind.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year 1899.
N. ..	—	1	—	1	—	—	—	—	1	1	—	1	5
N.E. ..	8	15	5	2	17	18	17	21	4	18	5	24	154
N.W. ..	4	—	8	5	1	1	1	4	13	7	6	2	52
N.N.E. ..	—	—	—	—	—	—	—	—	—	—	—	—	—
N.N.W. ..	—	—	—	—	—	—	—	—	—	—	—	—	—
S. ..	1	1	—	—	—	—	—	—	—	1	2	—	5
S.E. ..	4	8	5	4	4	4	3	1	3	2	5	1	44
S.W. ..	12	3	10	18	8	4	4	5	3	—	10	2	79
S.S.E. ..	—	—	—	—	—	—	—	—	—	—	—	—	—
S.S.W. ..	—	—	—	—	—	—	—	—	—	—	—	—	—
E. ..	—	—	—	—	1	3	3	—	—	1	2	1	11
W. ..	2	—	3	—	—	—	3	—	6	1	—	—	15

TABLE SHEWING RAINFALL AT CARDIFF IN EACH MONTH, DURING THE TWENTY-FOUR YEARS, 1876-1899.

YEAR.	JANUARY.				FEBRUARY.				MARCH.			
	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.
1876	1.91	12	0.68	2nd	5.33	22	0.90	14th	3.92	22	0.54	9th
1877	5.77	27	0.72	3rd	2.79	20	0.42	11th	2.66	21	0.55	23rd
1878	1.73	17	0.36	27th	3.07	16	0.87	27th	1.25	8	0.40	28th
1879	5.95	10	1.30	1st	5.95	23	0.86	20th	1.14	14	0.32	23rd
1880	0.87	11	0.42	13th	3.88	22	1.06	18th	1.90	12	0.75	2nd
1881	0.92	12	0.23	26th	4.81	15	1.12	9th	3.88	16	0.68	3rd
1882	3.19	13	0.82	2nd	2.56	15	0.60	28th	2.26	19	0.32	1st
1883	5.75	25	1.11	24th	3.73	20	0.65	10th	0.60	10	0.12	19th
1884	6.03	21	0.99	31st	4.40	22	1.35	17th	3.39	16	1.27	3rd
1885	3.71	20	0.58	9th	3.65	22	0.67	26th	1.87	16	0.53	29th
1886	5.03	23	0.91	30th	1.32	11	0.62	28th	3.97	13	0.68	20th
1887	2.76	15	0.73	7th	1.45	6	0.73	3rd	3.21	10	1.16	15th
1888	1.70	12	0.49	1st	1.07	9	1.09	2nd	4.62	15	0.76	24th
1889	1.58	10	0.58	9th	2.00	16	0.64	10th	3.89	16	1.17	8th
1890	5.21	24	0.61	26th	0.55	7	0.22	19th	1.52	14	0.28	24th
1891	3.58	13	1.26	23rd	0.05	2	0.03	2nd	1.76	16	0.31	15th
1892	2.10	15	0.70	16th	2.38	19	0.58	20th	1.18	6	0.48	15th
1893	2.38	19	0.94	12th	6.04	22	0.95	25th	0.31	6	0.14	2nd
1894	3.20	23	0.44	19th	3.68	20	0.78	17th	3.37	13	0.82	1st
1895	3.88	20	0.71	19th	0.17	4	0.08	24th	3.92	21	0.85	27th
1896	0.64	6	0.40	24th	1.39	9	0.80	13th	4.47	24	0.54	7th
1897	3.78	17	0.50	31st	5.73	21	0.70	4th	6.29	19	0.90	21st
1898	1.96	10	0.48	10th	1.71	17	0.22	18th	1.12	9	0.53	6th
1899	5.50	20	1.03	20th	3.89	13	0.79	4th	1.39	6	0.88	25th

TABLE SHOWING RAINFALL AT CARDIFF IN EACH MONTH, DURING THE TWENTY-FOUR YEARS, 1876—1899.

YEAR.	JULY.				AUGUST.				SEPTEMBER.			
	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.
1876	1.91	10	0.41	6th	6.06	27	2.72	19th	7.08	19	1.28	30th
1877	4.94	18	1.27	14th	5.70	21	1.42	27th	3.25	8	1.39	27th
1878	2.01	9	0.78	23rd	10.82	24	3.64	15th	3.21	9	1.28	22nd
1879	4.00	21	0.81	19th	8.12	22	1.34	27th	4.85	17	0.69	7th
1880	6.64	23	0.95	17th	0.77	7	0.27	2nd	3.67	15	0.77	17th
1881	2.62	15	0.77	30th	6.94	20	1.45	22nd	2.09	13	0.48	22nd
1882	5.77	24	0.84	6th	6.75	16	1.14	22nd	3.94	17	0.79	28th
1883	3.56	21	0.82	20th	2.09	16	0.73	8th	6.14	19	1.53	23rd
1884	4.05	20	0.94	23rd	2.21	9	0.84	31st	1.96	15	0.64	21st
1885	0.72	6	0.31	18th	2.74	12	1.07	6th	6.51	23	1.76	10th
1886	4.85	17	0.71	29th	1.68	9	0.44	9th	4.08	14	0.75	4th
1887	1.51	13	0.85	26th	2.88	11	1.02	16th	4.07	17	1.24	1st
1888	6.83	25	1.16	7th	3.50	17	0.74	29th	1.21	8	0.52	27th
1889	3.85	12	1.16	9th	3.90	15	0.65	2nd	2.09	9	1.53	23rd
1890	3.57	19	0.73	17th	3.95	20	0.95	9th	1.57	11	0.50	17th
1891	2.21	17	0.36	2nd	7.19	22	1.10	26th	2.43	19	0.51	3rd
1892	3.83	9	1.50	12th	4.64	16	1.62	27th	3.95	14	1.38	29th
1893	3.88	17	0.80	10th	3.05	14	0.52	20th	2.03	15	0.89	28th
1894	4.22	20	0.97	24th	4.55	18	1.55	25th	2.22	10	0.80	22nd
1895	4.71	15	0.94	23rd	4.08	17	1.19	12th	1.17	10	0.40	6th
1896	1.14	8	0.35	24th	2.89	15	0.84	19th	7.34	23	1.10	17th
1897	2.51	8	0.80	6th	5.42	16	1.30	30th	6.37	13	1.38	29th
1898	0.40	2	0.20	1st	3.48	10	0.67	6th	1.94	4	1.38	29th
1899	0.32	6	0.09	1st	1.74	7	0.56	29th	2.59	13	0.74	26th

TABLE SHOWING RAINFALL AT CARDIFF IN EACH MONTH, DURING THE TWENTY-FOUR YEARS, 1876—1899.

YEAR.	OCTOBER.				NOVEMBER.				DECEMBER.				YEAR.
	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	Rainfall in Month. Inches.	Days on which 0.01 or more rain fell.	Greatest fall in 24 hours.	Date of greatest fall.	
1876	3.84	17	0.62	16th	5.27	18	0.75	12th	7.13	23	0.80	17th	46.62
1877	4.89	16	1.15	24th	6.54	25	1.06	24th	3.40	25	0.88	28th	46.79
1878	5.76	18	1.09	23rd	5.76	13	0.84	9th	2.70	10	0.75	28th	45.71
1879	1.51	12	0.35	19th	0.43	8	0.18	20th	2.11	9	0.79	31st	44.79
1880	4.94	15	1.45	25th	3.67	15	0.90	15th	6.70	20	1.09	14th	38.85
1881	3.23	13	0.72	22nd	4.98	23	0.65	26th	4.50	15	1.77	7th	41.62
1882	8.33	23	1.64	23rd	6.26	21	0.90	7th	4.86	25	0.73	31st	56.60
1883	4.23	17	0.61	15th	6.38	24	0.80	21st	1.92	17	0.57	10th	38.78
1884	1.01	17	0.35	8th	2.12	16	0.47	30th	5.87	20	0.68	5th	36.89
1885	5.59	22	1.60	22nd	5.47	16	1.11	27th	1.74	17	0.05	5th	40.99
1886	5.09	21	0.87	15th	5.39	21	1.03	5th	6.64	21	1.33	26th	48.11
1887	2.80	13	1.14	29th	3.48	21	0.69	3rd	3.46	20	0.75	12th	29.79
1888	1.74	11	0.52	28th	7.04	26	1.13	12th	3.61	16	0.88	27th	38.18
1889	3.77	25	0.48	8th	1.87	12	0.75	24th	2.40	14	0.80	21st	31.38
1890	1.92	16	0.41	7th	3.89	20	0.67	6th	0.80	4	0.33	18th	29.23
1891	7.12	22	1.32	18th	3.91	15	0.74	28th	6.19	19	0.78	30th	42.94
1892	2.64	15	0.51	27th	3.25	18	0.66	4th	2.23	12	0.62	1st	22.63
1893	5.98	21	1.29	4th	2.30	13	0.58	1st	4.18	19	0.94	12th	33.91
1894	4.91	14	1.05	24th	4.72	20	0.83	13th	3.66	20	0.51	17th	41.19
1895	3.67	15	0.94	3rd	4.21	23	0.60	5th	3.45	31	0.48	17th	32.64
1896	4.65	19	0.74	5th	0.96	5	0.60	15th	6.41	22	0.72	4th	35.42
1897	3.32	7	0.90	2nd	1.82	7	0.63	27th	6.06	18	1.19	7th	56.80
1898	7.30	18	1.13	17th	7.46	16	1.39	23rd	5.44	17	1.03	6th	42.07
1899	2.34	12	0.60	27th	3.29	11	0.95	9th	3.69	19	0.86	28th	32.75

20.75

LOCAL GOVERNMENT BOARD TABLES.

TABLE OF DEATHS DURING THE YEAR 1899, IN THE CARDIFF URBAN SANITARY DISTRICT, CLASSIFIED ACCORDING TO DISEASES, AGES, AND LOCALITIES.

[A]

MORTALITY FROM ALL CAUSES, AT SUBJOINED AGES.										MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																				
NAMES OF LOCALITIES adopted for the purpose of these Statistics; public institutions being shown as separate localities.	MORTALITY FROM ALL CAUSES, AT SUBJOINED AGES.							MORTALITY FROM SUBJOINED CAUSES, DISTINGUISHING DEATHS OF CHILDREN UNDER FIVE YEARS OF AGE.																						
	At all ages.	Under 1 year.	1 and under 5.	5 and under 15.	15 and under 25.	25 and under 65.	65 and upwards.	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	FIVE YEARS.														
																Smallpox.	Scarlatina.	Diphtheria.	Membranous Croup.	Typhus.	Bubonic or Typhoid.	Continued.	Relapsing.	Puerperal.	Cholera.	Erysipelas.	Miscellaneous.	Whooping Cough.	Diarrhoea and Dysentery.	Rheumatic Fever.	Phthisis.	Bronchitis, Pneumonia, and Pleurisy.	Heart Disease.	Injuries.	All other Diseases.	Total.
Central, Cardiff	920	303	100	46	47	322	102	Under 5 5 upwards	..	12	..	..	..	..	..	1	2	33	46	..	..	2	93	4	44	210	403
East	750	312	101	30	30	192	85	Under 5 5 upwards	..	2	..	..	..	..	..	4	..	3	3	..	..	54	92	68	6	244	517
West	857	336	108	32	48	228	105	Under 5 5 upwards	..	11	..	..	..	..	..	..	2	49	44	1	3	1	78	2	10	220	413
Union Workhouse ..	206	20	1	..	12	96	77	Under 5 5 upwards	..	6	..	..	..	..	..	4	7	30	70	..	..	3	91	2	17	230	444
Cardiff Infirmary ..	84	4	12	8	10	49	1	Under 5 5 upwards	..	1	..	..	..	..	..	1	..	..	1	4	..	55	81	43	2	139	413
Seamen's Hospital ..	5	5	..	Under 5 5 upwards	17		
Cardiff Sanatorium.	36	1	15	13	1	6	..	Under 5 5 upwards	..	2	11	..	7	1	2	2	30	7	16	185		
									..	1	13	20		
Cardiff Urban Sanitary District	2858	976	337	129	148	898	370	Under 5 5 upwards	..	1	43	..	..	..	..	..	..	12	112	160	..	3	264	8	20	684	1313
									..	2	18	..	..	..	..	5	..	8	9	3	202	255	156	108	753	1545	

LOCAL GOVERNMENT BOARD TABLES.

TABLE OF POPULATION, BIRTHS, AND OF NEW CASES OF INFECTIOUS SICKNESS, COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICER OF HEALTH, DURING THE YEAR 1899, IN THE CARDIFF URBAN SANITARY DISTRICT, CLASSIFIED ACCORDING TO DISEASES, AGES, AND LOCALITIES.

[B]

NAMES OF LOCALITIES adopted for the purpose of these Statistics; Public institutions being shown in separate localities.	POPULATION AT ALL AGES.			Registered Births.	(d)	(e)	Estimated to middle of 1899.	(f)	(g)	NEW CASES OF SICKNESS IN EACH LOCALITY, COMING TO THE KNOWLEDGE OF THE MEDICAL OFFICER OF HEALTH.										NUMBER OF SUCH CASES REMOVED FROM THEIR HOMES IN THE SEVERAL LOCALITIES FOR TREATMENT IN ISOLATION HOSPITAL.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	Smallpox.	Scarlatina.	Diphtheria.							Membranous Group.	FEVERS.						Cholera.	Krysipelas.	Smallpox.	Scarlatina.	Diphtheria.	Membranous Group.	FEVERS.						Cholera.	Krysipelas.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
											Typhus.	Enteric or Typhoid.	Continued.	Relapsing.	Puerperal.	1							2	3	4	5	6	7			8	9	10	11	12	13	1	2	3	4	5	6	7	8	9	10	11	12	13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Central Cardiff	53,824		57,589	1,617	Under 5 5 upwards	..	16	77	4	..	17	5	..	2	..	1	17	36	17

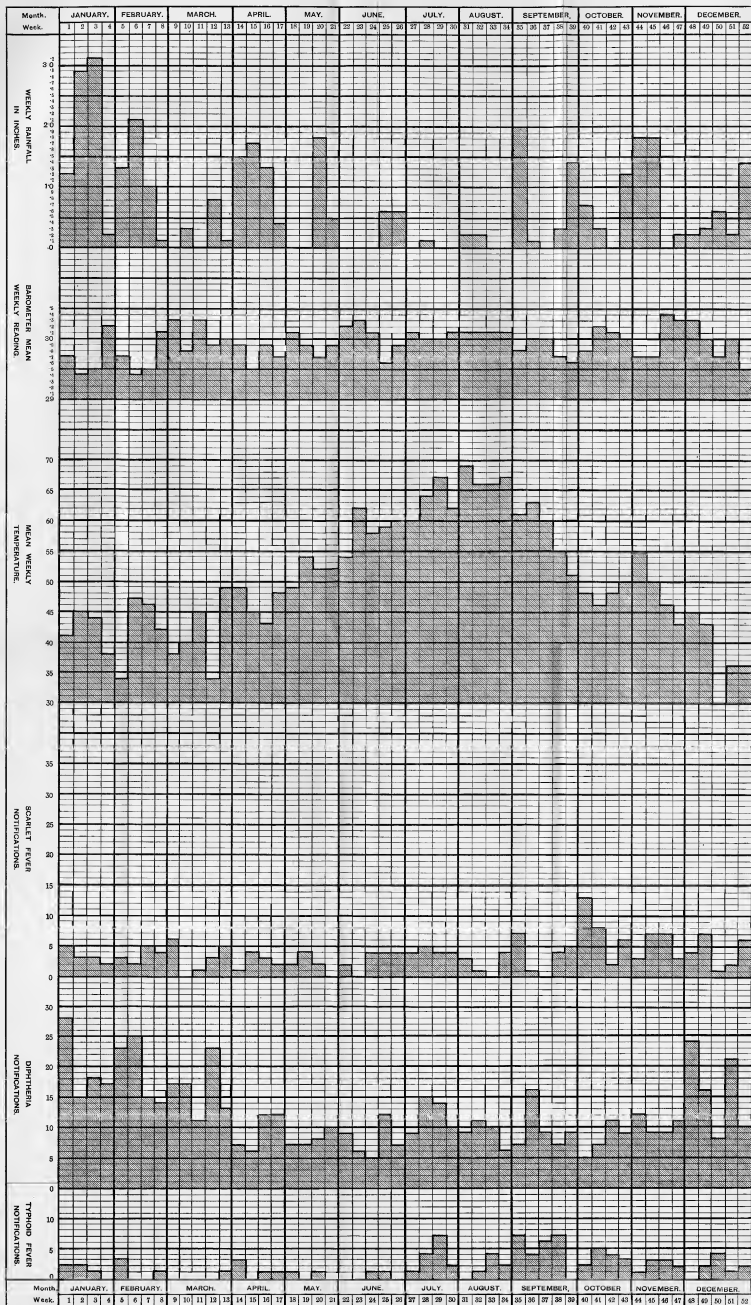
DEATHS FROM SPECIFIED CAUSES AT ALL AGES, AND AT SIX GROUPS OF AGES.

During the Year ending December 31st, 1899.

Estimated Population, 185,826.

CLASSES.	CAUSES OF DEATH.												ALL AGES.			Rate per 1,000 living.
	ALL CAUSES.															
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total.			
I.																
Small-pox																
{ Vaccinated																
{ Unvaccinated																
{ No Statement																
Mosses																
Scarlet Fever																
Typhus																
Influenza																
Whooping Cough																
Diphtheria																
Euteric Fever																
Simple Cholera, Chol. Diarrhoea																
Diarrhoea Dysentery																
Veneral Affections																
Erysipelas																
Pycemia, Septicæmia																
Puerperal Fever																
Other Specific Febr. or Zymotic Diseases																
II.																
Parasitic Diseases																
III.																
Dietic Diseases, Alcoholism																
Rheumatic Fever																
Rheumatism																
Rickets																
Cancer, Malignant Diseases																
Tuberc Monenteria																
Tubercular Meningitis, Hydrocephalus																
Phthisis Pulmonalis																
Scrofula, Tuberculosis																
Anæmia, Chlorosis																
Diabetes Mellitus																
Other Constitutional Diseases																
V.																
Premature Birth																
Congenital Malformations																
Old Age																
Inflammation of Brain and Membranes																
Apoplexy, Paralysis																
Epilepsy																
Convulsions																
Laryngismus Stridulus																
Paraplegia, Disease of Spinal Cord																
Other Diseases of Nervous System																
Endocarditis, Valvular Diseases																
Pericarditis																
Angina Pectoris																
Syncope																
Aneurism																
Senile Gangrene																
Embolism, Thrombosis																
Other Diseases of Circulation																
Laryngitis																
Croup																
Other Diseases of Larynx and Trachea																
Emphysema, Asthma																
Bronchitis																
Pneumonia																
Other Respiratory Diseases																
Stomatitis																
Dentition																
Diseases of Stomach and Intestines																
Gastritis																
Enteritis																
Peritonitis																
Jaundice																
Cirrhosis and other Diseases of Liver																
Other Diseases of Digestive System																
Diseases of Urinary Organs																
Diseases of Organs of Generation																
Diseases of Organs of Parturition																
Diseases of Integumentary System																
Other Local Diseases																
VII.																
Accident, Negligence																
Suffocation																
Homicide																
Suicide																
Execution																
VIII.																
Debility, Atrophy, Inanition																
Other Ill-defined Causes																
TOTAL																

Meteorological Observations and Weekly Notifications of Scarlet Fever, Diphtheria, and Typhoid Fever.



Deaths from All Causes, and the Seven Chief Zymotic Diseases.

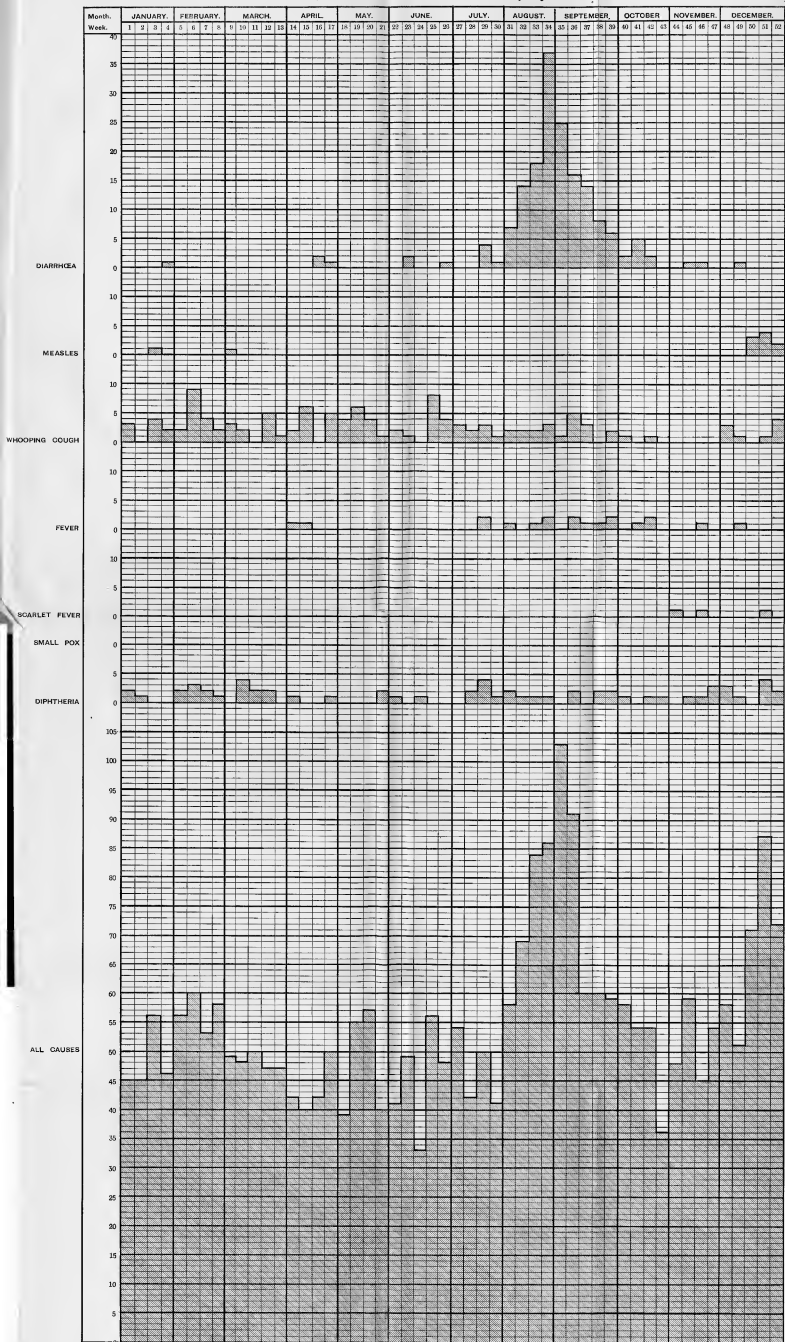


Chart showing death-rate per 1,000 of the population from Zymotic Diseases during the Years 1878-1899.

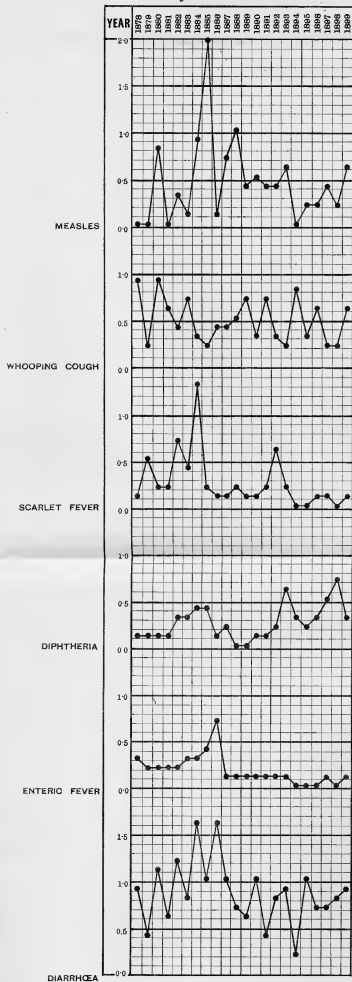


Chart showing the influence of temperature on the Diarrhoea death-rate in Cardiff, during the Summer quarters of the Years 1872-1899.

